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EARL PARKER HANSON

THE AMAZON: A NEW FRONTIER?

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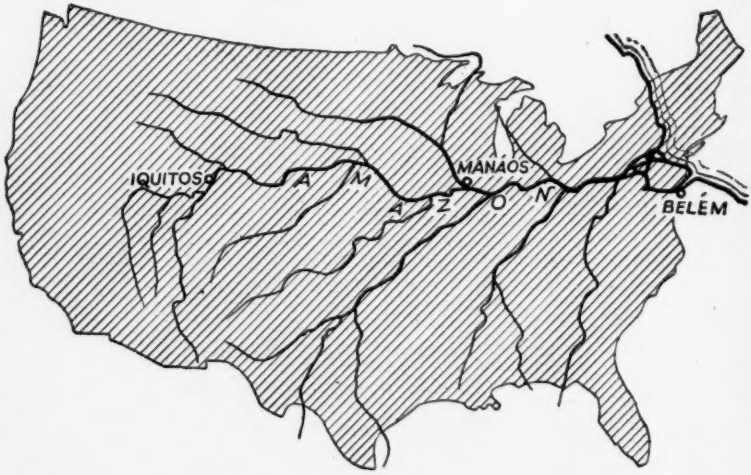
HOW BIG IS THE AMAZON

If the Amazon were laid on the U.S. ····
the basin would cover almost the whole area



If it were laid between South America and Africa ····
the part navigable by ocean steamers would span the Atlantic

THE AMAZON: A NEW FRONTIER?

Earl Parker Hanson

1. Signs of the Times

The possibility of a new pioneer rush to the Amazon basin has been in the air for some time, especially in Latin America. During the last ten years, visitors to such capitals as Lima, Rio de Janeiro, and Caracas, have reported a significant change in attitude toward the basin on the part of many patriotic South Americans. Where previously the latter had tended to resent all mention and description of the region as leading the world to think that South America consisted largely of vast jungled wildernesses, filled with poisonous insects and unpleasantly savage Indians, many of them have lately begun to exclaim in rapture at the mere mention of the region: "Ah, *there* is the future South America."

To most North Americans the idea of Amazonian colonization has been so remote as to seem fantastic. One reason is that we North Americans know relatively little about the basin; another is that the things we do know were learned largely from romantic books written by adventurers, who, in order to make their own experiences and mishaps sufficiently realistic and entertaining, were forced to paint the country in colors so gloomy as to preclude all thought of settlement by men and women who want to make new homes for themselves while carving a new civilization out of the wilderness.

PRESIDENT VARGAS ADDRESSES SIX NATIONS

Two recent events, however, have focussed much popular attention, even in North America, on the Amazon basin as the scene of a future pioneer movement. The one was a clearcut statement made by President Getulio Vargas of Brazil in 1940 in the city of Manáos, a thousand miles up the Amazon River. There Vargas addressed himself to the Amazonian nations, including Brazil, Peru, Bolivia, Ecuador, Colombia, and Venezuela, definitely called for the basin's integrated development, and suggested a conference of the nations in question to begin planning that tremendous job. To some North Americans this seemed like a mere political gesture, designed to divert attention from more important issues. To others Vargas' statement, coming from a man who is at least in a position to know more than most of us about the Amazon basin and its possibilities, meant that perhaps we, as a whole, have been wrong for years about the region's nature. To still others it was significant in that, being made by a responsible statesman, it advanced discussions about the Amazon basin's possibilities from the realm of the merely intellectual and scholarly into that of practical politics.

RUBBER AND QUININE IN THE BASIN

The other event that focussed our attention on the Amazon basin was the loss to the Japanese of those Asiatic sources from which we had been getting virtually all our rubber and quinine. From the day that the enemy emerged from the Malayan jungles to take Singapore by the back door, we were forced to spend millions in a frantic effort to obtain wild rubber and wild quinine from the Amazonian forests. We sent hundreds of North Americans there, imported into the Amazon basin thousands of South Americans as a labor force to gather our essential raw materials, explored the basin, improved transportation facilities there, sent

down steamers, launches, barges, established new airlines, built new airports, and in general did many of the things that would be a normal part of a large-scale pioneer and development program.

In other words, even while the possibility of a pioneer movement into the Amazon basin is being hotly debated in twenty-one American nations, its beginning has already been made a reality under the war's impetus. That beginning, too, is being argued widely, as a proven failure by some, and a relative success by others. Will the movement keep on growing and expanding after the war, will it collapse entirely the day peace is declared, or will it suffer a temporary setback and then gather momentum again, to the point where it can absorb European refugees and perhaps even North American unemployed?

2. Opinions and Prejudices

Writing in 1851 about a town that lies near the Ford Company's present rubber plantations, the British naturalist, Henry Walter Bates, said:

> "Santarem is a pleasant place to live in, irrespective of its society. There are no insect pests, mosquito, pium, sand-fly, or motuca. The climate is glorious; during six months of the year, from August to February, very little rain falls, and the sky is cloudless for weeks together, the fresh breezes from the sea, nearly 400 miles distant, moderating the great heat of the sun."*

Passages like that often occur in the works of nineteenth-century travelers. Men like the great Baron von Humboldt and such British contemporaries of Darwin as Bates, Wallace, and American explorers like Lieutenant Herndon, whom our govern-

* Henry Walter Bates, *The Naturalist on the River Amazons*, Everyman's Library, E. P. Dutton & Co. P. 90.

ment sent in the 1840's to report on colonization possibilities, were almost unanimous in their enthusiasm over the basin's future as the "conquered" and developed home of millions of human beings. Modern scholars are as a rule more pessimistic. When several of them describe the basin in their respective books as one of the world's great deserts, they may mean only that it is sparsely populated; but use of the word "desert" seems to imply that the lack of population is caused by natural conditions which prevent people from settling there in any appreciable numbers. The general impression of impenetrable forests swarming with insects, heavy, steaming atmosphere, hostile Indians, drenching rains, malaria, hookworm, and a debilitating climate, is too widespread, too deeply rooted, and too avidly press-agented by the modern "intrepid" school of adventurous travel-writers to permit many glimpses of the region as a Promised Land.

"IT CAN'T BE DONE BECAUSE . . ."

Most of the current arguments against any Amazonian pioneer movement, in the immediate or foreseeable future, raise some or all of the points listed below:

(1) The country as a whole cannot support large populations. (2) Even if it could, the climate would still be inimical to health, which means that any large groups of white men who settled there would soon deteriorate. (3) European or North American settlers would not want to go there. One cannot, in any event, make good pioneers out of city dwellers like the European political refugees. (4) Immigration policies of the South American nations are, by and large, against the admittance of any large body of Europeans into such regions as the Amazon basin. (5) It would cost a great deal of money to colonize and develop the basin, and that money is not in sight. (6) Powerful forces, similar to those that have a vested interest in the Asiatic rubber

plantations and hope to get those plantations back after the war so they can again supply the world with rubber, would work (and *are working*) against any attempt at real Amazonian development. (7) The success of a pioneer movement in any large area depends in the end on world markets for the products of that area; such world markets are not in sight for anything that the Amazon basin can supply. After the end of the war, the United States will undoubtedly depend for its rubber and quinine on the synthetically made products of factories, supplemented, if at all, by the products of those same Asiatic plantations that are now temporarily in the hands of the enemy.

"BUT ON THE OTHER HAND . . ."

To each of those arguments there is a counter-argument: (1) The pessimists only too often base their claims on insufficient knowledge of the Amazon basin's size and varied nature. One could with equal justice have looked at the Louisiana swamps in 1600, and deduced that North America would never amount to anything. Moreover, they forget that pioneer movements do not start full-blown and all at once, but little by little, as the settlement of New England started with the small-scale landing of the Pilgrims. They are not painless and comfortable; they inevitably include many tragedies and setbacks; the colonization of North America included the loss of Raleigh's Roanoke Island colony. (2) The world is today in a process of rapid change, in which geographical horizons are expanding and scientific thought on many subjects is being revised to correspond. (3) Whether or not white settlers from elsewhere will want to move to the Amazon basin cannot be determined at present. When the time comes, that question will be decided by the prospective settlers themselves, influenced in part by the alternatives to pioneering that might offer themselves *at that time*,

in part by then current opinions about the region, and in part by the attractions that may be offered to them by the Amazonian nations. (4) The South American nations are changing very rapidly today, to the point where the imminent development of the Amazonian hinterlands may seem highly desirable as well as practicable as an integral part of their own national development. If that day arrives, they can be expected to amend their immigration policies. (5) Money for the resettlement of refugees as a philanthropic venture would undoubtedly be scarce; if, however, the development of the Amazon basin should seem like an economically feasible project after the war, it is probable that plenty of money could be found for it as a long-term investment. (6) It is true that Amazonian development would be opposed by powerful world forces, but the world's entire international line-up, political and economic, is changing today. (7) There is no possible way of forecasting, at the present time, what world markets will be after the war. Certainly our own Good Neighbor policy, and the concept of hemispheral military and economic solidarity point to strong possibilities for the kind of general Latin American industrial and economic development that might include the development of the Amazon basin. Moreover, the question of world markets is often settled, not by economics but by the kind of governmental policies that determine tariffs.

IF . . .

In other words, those who foresee, and at times also advocate, the development of the Amazon basin, see it not as a certainty but as a new possibility, based in part on new knowledge of the basin gained in recent years, and in part on the alignment of world forces and world economies after the war. If Europe is so reshaped that its various nations have plenty of room for their

own peoples, if the United States has no post-war economic slump to create another large class of unemployed, then there will doubtless be no large rush of Europeans and North Americans into such American frontiers as the Amazon basin, though the development of the basin may proceed nevertheless with Latin American pioneers. Again, if the Japanese should ruin the Asiatic plantations of rubber and quinine before relinquishing them, the United States may well turn to permanent South American sources of such materials, though the industrializing South American nations may also undertake the development of such sources for the purpose of supplying their own factories.

Those "ifs" are at present imponderable. On their outcome depends not only the question of whether there will be a post-war Amazonian pioneer rush at all, but also the question of how rapid and how large it will be if it does take place.

On the Casiquiare

3. The Modern Age of Discovery

The present is in some ways the greatest age of discovery that the world has ever known. The new points of view on many distant areas, gained by millions of soldiers and civilians alike, the reappraisal of both Arctic and tropical climates enforced by global war's grim necessities, the new realization, growing out of the development of commercial aviation, that the world is round even for practical purposes—creating our modern clamor for new map projections—all are geographical revaluations so stupendous that they add up to an entire world-wide movement of rediscovery so sweeping that it can well be called a geographical renaissance.

In line with that movement, we are today not only changing many old points of view about the Amazon basin, but have in recent years explored it minutely. When the fortunes of war forced us to turn our serious attention to the Amazon basin, in part because of military problems imposed by the concept of

hemisphere defense, and in part as a new source of rubber and quinine, they also forced us to re-examine the entire area for the purpose of putting its defense and wartime exploitation on solid bases.

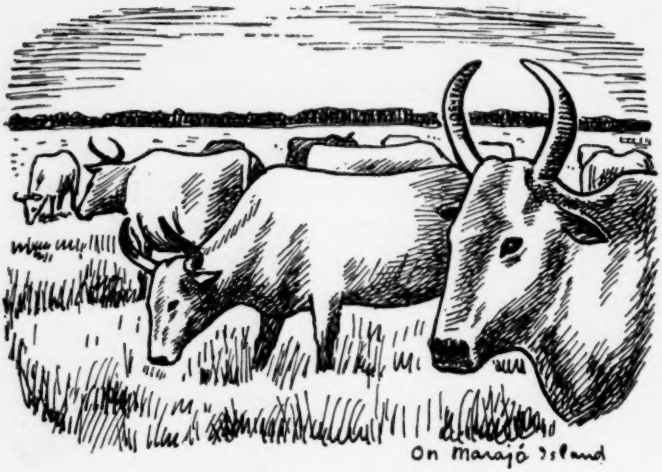
YEARS OF EXPLORATION—THE 1940'S

As a result it is probable that the past two years have seen more actual exploration of the basin, more knowledge gained about its physical nature, than have all the four centuries since that early conquistador, Francisco de Orellana, was the first white commander to traverse it. Not only have the nations of the Americas sent explorers out into all its nooks and crannies, to scout for industrial raw materials and the best possible means of getting those riches out, but we have sent heavy transport planes on hundreds of scheduled flights over vast expanses of wilderness that were completely unknown a year or so ago. By agreement with the Amazonian nations, and in cooperation with them, we have sent parties into the densest jungles to build modern airports where yesterday primitive Indians were the only inhabitants. The United States has sent hundreds of clerks, administrators, engineers, and medical men into the basin in connection with its rubber program. The resulting new points of view necessarily vary from the gloomiest to the most enthusiastic, depending largely on the adaptability of the individuals in question and on whether or not they managed to enjoy themselves in the region; but they do comprise a general revaluation to disprove and displace yesterday's view of miasmic vapors, incredible insect pests, intolerable heat, and dangerous Indians.

The United States and the South American nations have also sent commissions to study possibilities of raising foodstuffs in various parts of the basin, to study the health problems of existing settlements, to carry out health programs, and the like.

THE BASIN IS RE-EXAMINED

So extensive a program of re-examination and revaluation, coupled with positive attention to remedies for existing faults, cannot help but be reflected in realistic thinking about the entire problem of post-war Amazonian colonization. Naturally, it has already produced many North and South Americans whose experience has convinced them more firmly than ever that no sane man would ever dream of trying to make his permanent home in so unpleasant a region. But it has also produced many others who are by now not only convinced that an Amazonian colonization movement is perfectly feasible, but have felt the stirrings of the pioneer urge within themselves and want nothing better than to play active parts in such a movement. The difference lies in the beholders, not in the country.



4. Geography of the Amazon Basin

Few laymen have any real conception of the Amazon basin's size, wealth, and variety, or of the truly staggering proportions of the river system itself.

In length, the Amazon River is exceeded only by the Nile, and very little by it; in volume of water, by no three of the world's other rivers combined. Some 3,900 miles long, it has its westernmost sources high in the Andes, within 100 miles of the Pacific Ocean, and its mouth in the Atlantic. It is estimated that one fifth of all the world's running fresh water is carried by the Amazon; at low water its mouth, a hundred and fifty miles wide, pours some 60 billion gallons per hour into the sea to turn the ocean from salt to brackish for over a hundred miles from shore. It would take a score of Mississippi Rivers to equal that low-water flow, which is vastly exceeded in the rainy season.

Nobody has more than a vague idea of the Amazon's annual

high-water flow. At Manáos, a thousand miles upstream, it has a yearly rise, between the dry season and the rainy, of up to sixty feet. At its peak the river increases hundreds of miles in width at many points, flooding thousands of square miles of forest-covered land.

"THE JUGULAR VEIN OF A CONTINENT"

There are some 1,100 known tributaries of the Amazon, not counting thousands of brooks. Nine or ten of these tributaries exceed the Rhine in length, and carry more than double its volume of water. Seven of them are over 1,000 miles long, and one, the Madeira, is nearly 3,000 miles from source to mouth. Yet the main stream often receives the waters of these subject rivers without showing any appreciable increase in either width or current.

So great is this river that one name does not suffice for it. It is called the Amazon only along the lower third of its course. Above the confluence of the Rio Negro it is the Solimões. Its upper third, in Peru, is known as the Marañón. With poetic justice it has been called "The Jugular Vein of a Continent." The early conquistadores came even closer to the mark when they called it (as well as several other bodies of water in the New World) "*El Mar Dulce*"—"The Fresh Water Sea."

The largest ocean-going steamers could, with proper piloting and careful attention to channels, ascend the river a thousand miles to the city of Manáos. Along parts of the route the passengers would be unable to see either bank from the middle of the stream. The same steamers could ascend the Amazon for another thousand miles, to the city of Iquitos, in the high-water season, while a fair-sized freighter, drawing 18-20 feet of water, can sail to Iquitos at any time of year.

STRATEGIC POSITION OF THE AMAZON

From a strategic point of view, the Amazon may be regarded as a kind of Mediterranean Sea. An enemy power might without too much trouble ascend the Amazon to Manáos, there change to shallower draft boats, and then ascend the Rio Negro and Rio Branco, arriving eventually at a flat open prairie that is not only a natural landing-field for airplanes, but is also less than a thousand miles from the Panama Canal. Similarly, and by various river routes, an enemy power might gain backdoor access to all six of the Amazonian nations. The possibility of such moves is almost zero today because the enemy can no longer hope to control the sea at the river's mouth, but that does not change the river's nature as it must be recognized in the formulation of future policies for the hemisphere's military defense. The picture is complicated by the modern growth of air power and the presence in the Amazon basin of many areas that would make excellent airbases, with the added advantage that they are located in wilderness areas where there is nobody to report what may be going on. So military men tend to become advocates of Amazonian colonization. It is extremely difficult to defend uninhabited country, without civilian populations to supply information, provide a body of defense against parachute troops, and furnish foodstuffs to friendly armies.

In so vast a river-system there are naturally infinite variations, not only in depth, turbulence, and navigability, but also in the degree of fitness for human living. The man, for instance, whose sole acquaintance with those rivers stems from one ascent of the Orinoco, may dismiss all thought of colonization as fantastic because he was pestered and badgered almost to frenzy by enormous swarms of minute black flies. Often, however, he does not know that he could at any time have left the insect pests behind by walking only fifty or so yards inland at almost any

point, or by ascending such "black-water" streams as the Atabapo for an equal distance. Nor does he realize that there are thousands of miles of pleasant rivers in the Amazon basin where insect pests either do not exist or are no more a deterrent to human habitation than they are in New Jersey.

CLIMATE

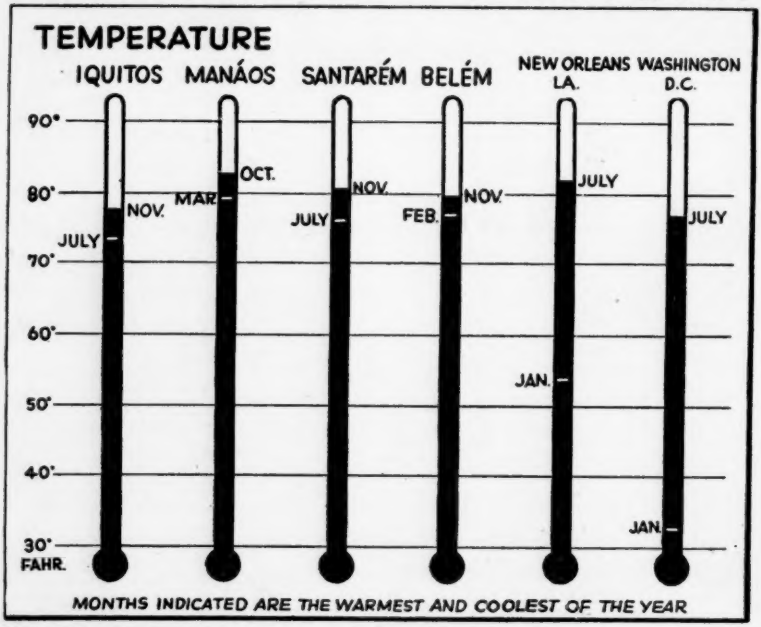
The climate of that vast region is much more equable than is generally supposed. Temperatures in the lowland basin vary from 65° to about 95°, and almost never exceed 100°; from there, as one ascends the eastern slopes of the Andes, the climate becomes more temperate with altitude, ranging to truly arctic on the highest Andean peaks. Rainfall and humidity are certainly considerable. Rains are torrential at such spots as Manáos, though of short duration. However, except as they ruin one's clothes, they are generally considered refreshing. Humidity runs to 80% or more, but people who have lived in the basin for years have become thoroughly accustomed to it.

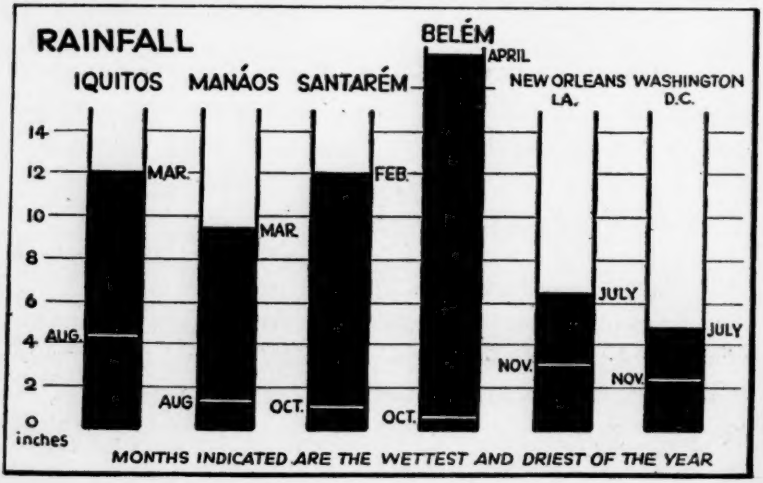
The drainage basin of the Amazon extends from the topmost crests of the Andes, almost 20,000 feet above sea level, down to the world's largest alluvial plain, and then for some 2,000 miles eastward to the Atlantic coast. And that basin has an area of some 2,700,000 square miles, an empire virtually untapped and unpeopled in the heart of the Western hemisphere. Not only is it almost as large as the United States but it is also almost as varied in nature and probably quite as wealthy in its resources.

FLOOD PLAIN AND JUNGLE

The flood plain, the low, sometimes marshy, and always inhospitable ground that is inundated every year, is some 23,000 square miles in extent and so comprises less than one per cent of the total. It is especially to this area that the prevailing gloomy mis-

THE CLIMATE OF THE AMAZON BASIN





conceptions apply. But this flood plain and the other lands of varying heights that lie immediately adjacent to the river banks characterize the entire Amazon basin in the minds of millions of people. For centuries the rivers have been the region's highways; practically all transportation has been by boats and by the human carriers that acted as "feeders" for those boats. Hence most travelers have known and described—as generalizations for the entire area—only what they saw from river boats and on occasional land excursions a few miles inland.

But even the jungles of the low-lying parts of the basin, as opposed to the eastern slopes of the Andes—about which more later—are far more varied in nature than is generally imagined. There can be no one homogeneous "jungle" millions of square miles in area. The same North American who is quite aware of the striking difference between the pine forests of Wisconsin, the stands of mixed deciduous trees of New England, and the mangrove swamps of Florida, only too often dismisses the South American rain forests as being all the same, and equally unpleasant in nature. Today, however, people are gradually becoming aware of the marked variations that one of our best Amazonian explorers, Desmond Holdridge, had in mind when he wrote:

> "I cannot believe that any one word can describe the enormous variety of growths to be found in the tropical forest areas. If we call the upland Guiana forest "jungle," what shall we call the lowland, white water river forest? Or black water forest? Or the parsley-like trees in the woodlands between patches of savannah? Or the truly dreadful *igapó*—flooded forest? Even more than the inadequacy of the word, I detest its neurotic connotations. Snakes hanging from branches—only a demented snake would do that—crocodiles, who are very stupid creatures, nibbling at one's ankles, jaguars saying unpleasant things in a deep bass voice and snaggle-toothed savages who think it more logical to shoot you with a poisoned

arrow than to trade with you for steel instruments—and imagine what a steel knife or axe is to a man who must clear the Amazonian forest with a stone gadget."*

THE PRAIRIES OF THE AMAZON BASIN

It is in part, too, because the craze for rubber led men to seek their wealth among the millions on millions of wild trees, that the Amazon basin has been regarded as being one large forest. Little attention has been paid to the thousands of square miles of prairie areas that are found here and there. By and large the local white inhabitants were not interested in the prairies because they were looking for sources of rubber, and everybody knew —at least until Edison experimented with goldenrod—that rubber didn't grow on prairies. Only on Marajó Island, as large as Switzerland and in the mouth of the Amazon, and on the upper Rio Branco, some 500 miles north of Manáos, were appreciable parts of the existing vast areas of open prairies actually utilized for settlement and cattle culture. The reason was that in both places the grasslands were tapped by navigable waterways—in the case of Marajó Island by the southern branch of the Amazon's mouth that gives access to the city of Belém, and in the case of Brazilian Guiana by the Rio Branco itself, which permits a certain amount of river transport to Manáos.

Today, however, Latin Americans are becoming acutely aware of those large expanses of open "campos," some of them known for years and even for centuries, and of many others that were discovered from the air only in the past year or so. Some years ago, for instance, the great Brazilian explorer, General Rondon, discovered large prairies about a hundred miles from the lower Amazon, north of the city of Obidos. This area is described

* From *Pindorama* by Desmond Holdridge, 1933, p. 8. Courtesy of G. P. Putnam's Sons.

by Brazilians as a fertile, waving sea of grass, some 20,000 square miles in extent, full of game, eminently suited by nature for cattle raising and perhaps also general agriculture, and at present inhabited only by a few primitive but peaceful Indians. The scheme of colonizing that prairie, almost ten times as large as the State of Delaware, of giving it access through an overland road to the Amazon River, and putting it to work producing meat and other foodstuffs for the surrounding countrysides, has long been discussed in such cities as Obidos, where men know the country at first hand.

A "PAN AMERICAN HIGHWAY" THROUGH THE BASIN?

To the west and northwest of this campos area are other prairies, and in many parts of that empty wilderness the so-called "jungles" extend only thirty to forty miles inland from the river banks before giving way to the far more healthful and habitable open plains. Indeed, it has been calculated that a "Pan American Highway" *could* be built from the Venezuelan capital of Caracas in a southward direction to Brazilian Guiana, and thence south and east to the Atlantic, parallel to the lower Amazon and about a hundred miles north of it, and that less than 500 miles of that lordly swath of 1,800 miles, traced through the heart of the Amazon basin, would have to be cut through forests. Similar conditions prevail to the south.

MANAOS—COMMERCIAL CENTER

The same transport system of river boats and human carriers that still exists in the part of the basin extending over 2,000 miles from the Andean foothills to the sea, accounts for the fact that in that entire vast area all the towns and cities are located on river banks. Manáos itself, the region's commercial center that lies a thousand miles up the Amazon and a few miles up the Rio Negro, is a

city of more than 75,000, kept scrupulously clean, with street cars, shining automobiles, a world-famous opera house that is now used as an office building by the United States' Rubber Development Corporation, motion picture theaters, and a number of popular cafés. Strictly speaking, however, Manáos has never been a city, despite its population and appurtenances. It has always been an overgrown trading post, with no contiguous agricultural areas, and no manufacturing. Dense forest encroaches on the city limits from all land sides. The city exists solely for the sake of its commercial life, which is devoted to serving and exploiting the forests along tens of thousands of miles of navigable rivers. The leading business houses resemble closely the old Hudson's Bay Company, with general stores located in Manáos itself, and trading posts scattered over thousands of square miles, sometimes connected with headquarters by steamer service, and always frequented by men hired to plunge into this or that wild area, to gather rubber, Brazil nuts, palm fibers, and anything else that may at the time constitute a commercially feasible "crop." Like the old Hudson's Bay Company, too, these companies were long supreme in the areas they controlled, with very little interference from government in the form of law or police.

FROM MANAOS TO BELEM

Below Manáos, the towns along the Amazon—Itacoatiara, Obidos, Santarém, and finally Belém at the river's mouth—are to some extent agricultural centers. Here one finds plantations of tobacco, sugar, cacao, and a few such foodstuffs as rice. The fact that many of these towns are today obviously decayed does not at all mean that nature and climate prevent a thriving civilization, but only that the basin suffered a slump after the collapse of the last rubber boom, and that markets for the town's products therefore fell off.

TOWNS ALONG THE SOLIMOES

Along the Solimões, or the middle Amazon between Manáos and Iquitos, there are also a number of towns, but few plantations. These towns are almost entirely trading posts, created simply to exploit the jungles; but, again, the absence of agriculture means only that no large-scale markets for agricultural products have been sought out. Manáos receives its foodstuffs by steamer from the downstream plantations and from the outer world; the city of Iquitos, farther up, lies in Peru and receives its foods from the outer world via river steamers, and from its own nearby agricultural areas on Peruvian soil.

IQUITOS—A TRADING CAPITAL

Iquitos comes far closer to being a real city than does Manáos, being not only a trading capital for the downstream jungle areas, but also for the upstream areas where economic activities have always been more varied. Cities like Yurimaguas on the Huallaga River, feeding commercially into Iquitos, deal with the Andean hinterland where agriculture has long been practiced. Indeed, such Amazon basin towns as Moyobamba in Peru and Santa Cruz in Bolivia, lie in the midst of potentially rich agricultural areas, with climates made mild and indeed delightful by their altitudes, and many a Spanish conqueror settled amid these Eden-like surroundings. They got along well, too, in a world whose entire transport system was simple and slow. It was only after the rest of the world acquired railroads and highways that towns like Moyobamba and Santa Cruz, which remained tied to mule transport westward over the mountains, or to canoes and balsa rafts eastward into the Amazonian River system, began to decline.

VALLEYS OF THE EASTERN ANDES

In the valleys on the eastern slopes of the Andes, ranging in altitude from a few hundred feet above sea-level to twenty thousand

feet, one finds almost any kind of climate he wants, any kind of soil, any kind of fertility, any kind of crops, and many kinds of mineral wealth, from oil to iron, gold, silver, and diamonds. Here, too, there is little question of being able to control such diseases as malaria and hookworm that have bedevilled past settlers in the lowland tropical areas.

TRANSPORTATION DIFFICULTIES

A number of attempts have been made to colonize these valleys with such people as Germans and North Americans, and to many of the latter the attempt made in 1922-23 by Alfalfa Bill Murray, in the neighborhood of Santa Cruz, proves the job impossible. Virtually all the colonists returned to the United States, disillusioned, within a year or two. No critic of standing believes, however, that such failures were caused by the poverty and inhospitality of the land itself; they are almost universally ascribed to the transportation difficulties that prevented any real commercial relations with the rest of the world.

Some years ago, Mr. Raye R. Platt of the American Geographical Society studied a number of areas in the Amazon basin and on the eastern slopes of the Andes. In practically every case his conclusion was that the area in question was by nature suited for development, but the problem of access seemed insoluble. He sums up as follows:

> "It seems evident that we have in this zone of eastern border valleys and adjacent lowlands the curious anomaly of a tremendous total acreage of land climatically suitable for white colonization and capable of producing a wide range of temperate and sub-tropical crops and livestock for human consumption yet so shut off from the rest of the world by mountain barriers on the one side and by distance from ocean ports on the other that, for the most part, it scarcely merits classification with the pioneer lands of the earth at all. Every step that is

taken to increase the productivity of lands already under cultivation and to shorten the time and cheapen the cost of transporting their products to the consumer further postpones the distant day, now difficult to visualize, when the demand for its land and its potential products is such that governments will be forced to establish the needed transportation routes or private capital will find it profitable to do so."*

THE TINGO MARIA HIGHWAY

That gloomy view was expressed in 1932 and was then justified. So rapidly are the times changing, however, that today the road-building fever that struck South America with the Pan American Highway, has already extended its effects over the crest of the Andes, down the eastern slopes to several of the areas that Platt praised, and in places to navigable waterways of the Amazon system. An outstanding example of this is Peru's new Tingo María Highway, a notable work of engineering, built entirely by Peruvians, that connects Lima with fertile colonization areas on the Huallaga River and will eventually be extended to the navigable waterways of the Ucayali.

Even while the skeptics were denying all possibility of colonization in the Amazon basin, it took only the completion of a highway to bring about its active encouragement by the Peruvian government.

"Tingo María is a frontier development of the last 5 years, sponsored by the Peruvian government as a colonizing project. The town has pushed the dense jungle back from the flat flood plain and become a center of some 2000 pioneers. The road to Lima forms the axis of the village and the life line back to the markets. On the rich earth of the valley floor, recently cleared of forest, young plantations of citrus, sugar cane, and bananas grow prosperously and tea and barbasco plantings have been

*_Pioneer Settlement_; Cooperative studies by twenty-six authors. New York, American Geographical Society, 1932. P. 107.

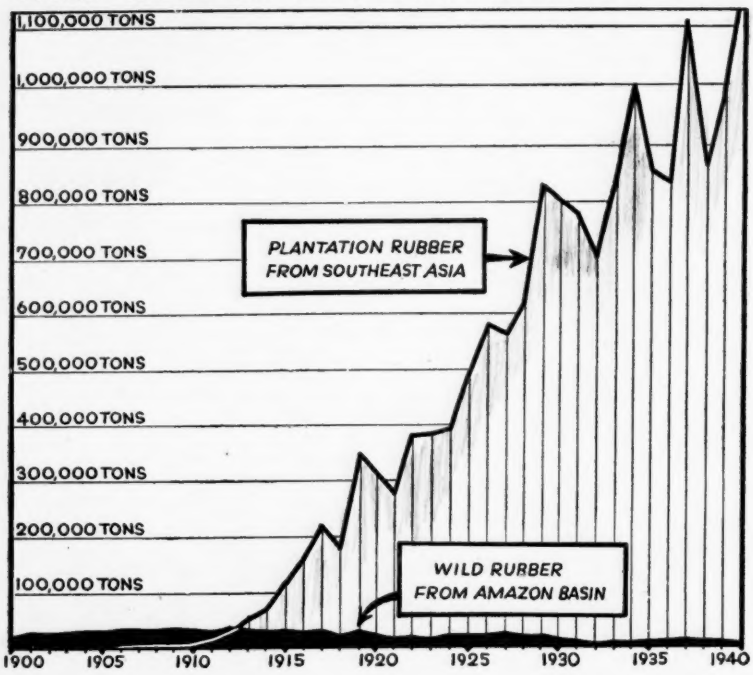
established. The accent is so heavily on export crops that the region requires a constant flow of trucks over the road to Lima to keep it alive. Fruits and other tropical products reach Lima from this region; the returning vehicles carry general merchandise to the new colony. Loaded trucks make the 570-kilometer trip in 15 to 16 hours."*

When Peru completes two other projected and half-finished trans-Andean highways, and other Andean nations push similar ventures, the entire prospect for settlement will change radically in those Andean valleys.

* George McCutchen McBride and Merle A. McBride, "Peruvian Avenues of Penetration into Amazonia," *The Geographical Review*, vol. xxxiv, no. 1, January 1944, p. 11.

5. Resources

The lowland Amazonian forests are famous as the world's original sources of natural rubber. Under modern conditions, however, its exploitation in the wild state is uneconomical, in part because men often have to walk long distances from one tree to the next, and in part because the wild trees have a lower yield than those that grow on plantations and have been cultivated, grafted, bred and cross-bred scientifically for the purpose. Hence, when the Asiatic plantations began to produce, around 1910, there was a terrible economic slump in the Amazon basin. The bottom dropped out of the price of rubber; men left the region by the thousands; others were left there as "stranded populations"; whole towns were deserted and began to fall into ruins; whole rivers were literally given back to the Indians. The intensity of that depopulation movement varied with location and prevailing governmental policies. In Venezuela, along the upper Orinoco, it was so nearly complete that the "civilized" river Indians, long



accustomed to relying on the white man's stream of goods, were for a time faced with the problem of developing a new and self-sufficient primitive culture. Along the major rivers in Brazil it was less intense because the government took the step of subsidizing transportation, which made a certain amount of commerce possible and held a minimum population in place. Nevertheless, during the world depression there were thousands of miles along various rivers where local inhabitants had only one source of income—the cutting of wood to serve as fuel for the steamers maintained by the government for the purpose of anchoring populations in these areas.

ORGANIZED RUBBER PLANTATIONS

In 1927 the Ford Motor Company obtained concessions along the Tapajóz River in order to start the first large-scale, modern rubber *plantation* ever seen in the Amazon basin. The company had many difficulties, caused by a prevailing scarcity of labor, by plant diseases, and by bad human health conditions. One by one, however, it solved its problems, to the point where it is expected to produce about 5,000 tons of plantation rubber in 1945, and where the Ford plantation is now regarded as one of the most healthful spots in all Brazil. The importance of this venture in solving technical problems that have hitherto stood in the way of true Amazonian development cannot be overestimated. South Americans are aware that the day is over when they can grow wealthy by simply running into the woods and gathering their riches wild. Little by little, from now on, they must work and develop the country to make it produce their wealth for them. That requires on the one hand the kind of technical experimentation in which the Ford Company pioneered and which such governments as Brazil's are constantly carrying on, and on the other the presence of a permanent labor supply.

LUMBER AND TRANSPORTATION PROBLEMS

Meanwhile the natural, wild wealth of the lowland forests is still enormous. The greatest variety of lumber is found, from the softest and lightest balsa to the hardest "axe-breaking" precious woods that sink on being immersed in water. To the professional lumberman with North American standards, that embarrassment of riches is a drawback; the trees are so mixed and so scattered that considerable distances often intervene between two specimens of the same kind, and transportation thus becomes a serious and expensive problem. The construction of roads as part of a systematic development program would, however, go far toward solv-

ing transportation problems. The trees are probably not too scattered to furnish lumber for local development and local needs, with only the rarest and most precious special woods being used for export; and modern techniques have in any event been developed by which mixed woods of all kinds can be ground into one pulp and then treated chemically to produce inexpensive synthetic "lumbers" that are well suited to most building purposes and so may eventually form an important export item.

Skeptics point out that when the world famous Madeira-Mamoré railroad was built in the early part of the century, the contractors "were forced" to import all their ties from Australia. That fact, however, must not be ascribed to the nature of the land or its resources. The railroad's builders—who had a "cost plus" contract, which gave them a guaranteed profit on every dollar spent—claimed that they had to import ties of insect-resisting gumwoods from Australia because the local labor-shortage prevented them from cutting locally any but the relatively soft woods that would have been devoured by pests within a few months after being put in place as ties. Here, again, the principal difficulty was not natural but human; the labor-shortage that would be remedied in the event of a new colonization-movement imposed the kind of obstacles that many observers have ascribed to the region's climate and flora. After the road was completed, all replacements of ties were cut locally with much success.

VEGETABLE OILS

In vegetable oils, so tremendously important today to the plastics industry, the Amazon basin is unsurpassed. Almost all of the oils that we have hitherto imported from Asia are found in its lowlands, plus a number of others that are found nowhere else. A recent book on Brazil, for instance, mentions the fact that the

castor bean thrives in the Amazon basin; that the Amazonian Babassu Palm is a "wonder-tree" that yields an excellent fiber, is well suited for the production of such by-products as acetic acid, methyl alcohol, and charcoal, and whose kernels contain an invaluable oil with a high glycerin content, capable of replacing coconut oil in explosives and soaps.* Cashew nuts, essential to the plastics industry, are found in profusion in the Amazonian forests; Carnauba wax, essential to shoe polish, furniture waxes, and phonograph records, is a Brazilian monopoly.

The present and future industrial importance of such resources can be judged by the importance of plastics—widely hailed as opening new industrial vistas that have as yet been only barely explored.

Medicinal plants, gums, resins, fibers of many kinds, are found abundantly throughout the Amazonian forests. Moreover, the jute of India has been acclimatized in the Amazon basin with great success, and needs only population to be industrially workable. There are a number of valid reasons why these products have not been exploited to any great extent to date. The principal ones are: (1) Lack of populations; (2) Prevailingly bad health conditions; (3) Lack of transportation facilities—especially overland between navigable waterways; (4) Lack of the kind of government interest that would direct active efforts at the overcoming of such difficulties.

WEALTH OF THE ANDEAN SLOPES

In the western part of the basin, on the Andean slopes, a great number of resources are found side by side with almost unlimited sources of water power and many fertile areas that are well suited to agriculture. While the forests contain such riches

**Brazil in the Making* by José Jobim, New York, The Macmillan Company, 1943.

as lumber, quinine, and many other medicinal plants (some of which are still better known to the Indians than they are to us), the earth also contains a wealth of fuels and minerals. Large deposits of petroleum in the region of Moyobamba in Peru have been investigated and staked by several oil companies. Deposits of iron, manganese, silver, and lead are found in many Andean areas, at present too remote from adequate transportation facilities to warrant exploitation. Gold has long been found in the upriver tributaries of the river system, and it is certain that the kind of prospecting rush that would come with any real developmental effort would undoubtedly uncover many new sources of that precious metal as well as of other minerals.

When the inhabitants of such "lost" towns as Moyobamba reached only by packmule transport, on foot or—lately—by airplane, talk enthusiastically about their "enormous" and widely varied mineral wealth that needs only transportation to be workable, they may well be suspected of a chamber of commerce kind of exaggerated advertising. A more eloquent testimony to the region's wealth, however, is found in the fact that a North American syndicate tried for years to obtain a concession for building an expensive and technically difficult railroad over the Andes to connect with navigable Amazonian streams; one of several reasons why the Peruvian government refused the concession, outside of political considerations, was that the requested return, of mineral rights along the way, was far too exorbitant.

6. Some Lessons of History

The history of the Amazon basin teaches many lessons, both inspiring and sordid, that have a decided bearing on the problem of future colonization.

In 1541 Francisco de Orellana was a member of Gonzalo Pizarro's expedition that set out from Quito, in today's Ecuador, to work its way eastward in search of El Dorado and the reputed cinnamon forests on the eastern slopes of the Andes. They suffered from hunger, cold, the attacks of Indians, mutiny among their own burden-bearers, and in general had a terrible time. Near the headwaters of the Napo River, Orellana was detailed to find food for the harassed men. The forest nearby gave way to an open plain, which was doubtless, like virtually all such areas in that part of the world, stocked in plenty with deer, tapir, and other game. Orellana wanted to hunt his food on this plain, but apparently he was overruled. Hence he set up a camp in the woods, set men to work making nails and cutting

wood, and eventually built two ships. In those ships, they spent eight months descending the Napo and the Amazon obtaining their supplies from the Indians as they went, and arriving at the mouth of the Amazon on August 26, 1542. Then they sailed to the island of Cubagua, off the Venezuelan coast, whence Orellana sailed to Spain, to defend himself against the bitter accusations of Gonzalo Pizarro that he and his men had deserted the main party. The charges of treason were never pushed formally by the Spanish court; and a new expedition eventually materialized. But it was poorly financed, poorly organized, and before long ended in failure in the maze of channels in the river's mouth, where Orellana himself died.

One cannot help but speculate on what would subsequently have happened to at least the upper part of the Amazon basin, had Orellana carried out his original intention of confining his search for food to overland hunts across the prairies. He would not have come anywhere near the Atlantic, but he would have discovered the kind of country that is only today becoming important in Amazonian affairs. In the open prairies he would have found land that was far richer from an agricultural point of view, far more healthful, than the jungled lands along the river banks that subsequently characterized the Amazon basin in the world's thinking.

EL DORADO IN THE AMAZON BASIN

As it was, the men of the Orellana expedition not only lived by looting Indian settlements but also picked up many shining, and often fanciful tales about greater wealth lying always beyond the horizon. So the legend of a golden city by a large lake was first brought out of the Amazon basin. The disappearance, in 1925, of Colonel Fawcett, who had been hunting a golden city somewhere south of the Amazon, periodically recurring maga-

zine articles in the North American press, and a large crop of superstitious tales told by modern Indians in the same Venezuelan Guiana in which Raleigh searched for El Dorado, "the golden one," prove that the legend is not yet dead.

For several centuries, El Dorado was a powerful spur to man's imagination, that not only drew explorers into the Amazon basin, but also thousands of settlers. Indeed, there are indications that the legend's persistence had some of its roots in economic need. So many men rushed from Spain to Peru after Pizarro's conquest of that country, that it wasn't long before the colony experienced an acute unemployment crisis. Some historians accuse various viceroys of Peru of advertising El Dorado whenever this pressure became too great, and of so getting rid of a lot of adventurers who promptly traveled eastward over the Andes and into the fabled Amazonian lands. It was a trick that was not unknown in Europe in the nineteenth century, when tales of a United States whose streets were paved with gold did much to relieve local unemployment situations.

THE EL DORADO PSYCHOLOGY

In subsequent Amazonian history, however, the El Dorado psychology proved even more important than the legend itself. That is the psychology that causes men to seek in the jungles for wild riches instead of settling down, developing the land, and making it produce wealth for them under controlled conditions.

When quinine was discovered as a preventative and remedy for malaria, there was a veritable "gold-rush," under which thousands of Indians were enslaved and driven to seek the fabled "Peruvian bark," with little attention being given to the kind of local agricultural development that would anchor a permanent labor supply in the region. The story was repeated, with all its sordidness and atrocities, when industrial developments in the rest of the

world demanded ever-increasing quantities of Amazonian rubber; few human documents are more shocking in their details than Sir Roger Casement's report, and that of the United States Senate, on slavery and atrocities in the Amazonian rubber forests, both published about the time that the Asiatic plantations were beginning to produce in commercial quantities.

THE RUBBER BOOM RETARDS DEVELOPMENT

Indeed, while the last great rubber boom brought millions of dollars into the Amazon basin, its working actually also did much to *prevent* the basin's development. It was largely in the hands of a few big companies, who equipped men to plunge into the jungles—at times with captured slave labor—set up camps, general stores, etc., and produce rubber for export, in return for foodstuffs and everything else needed to sustain life. Not only were the companies partly in the business of importing foodstuffs and manufactured articles, but they found that the only way they could keep their men working was by keeping them constantly in debt. That could only be done by forcing them to buy all their necessities from the employing companies at very high prices; hence the rubber workers were often actually forbidden to plant foodstuffs of their own.

THE ECONOMICS OF "COLONIALISM"

That kind of exaggerated "colonialism"—the export of the forests' wild products against the import of everything needed to sustain life—has characterized the basin's principal economy and psychology for centuries. For instance, in 1932, when the crisis caused by the collapse of the rubber boom was aggravated by the world depression, Brazil sought to go beyond mere subsidies of transportation in her efforts to keep the Amazon region from losing all its inhabitants. In a number of places, as on the Rio

Negro, government agronomists began to clear land and to start large plantations by means of which local inhabitants could at least feed themselves without having to rely on expensive imported foodstuffs. At the time, some of those same agronomists, while never doubting the ability of the land to support large populations through agriculture, expressed grave doubts as to the system's permanent practicability. One reason for these doubts was the stubborn opposition of the large trading companies that had previously held virtually unchallenged control of the rivers, and made much of their money out of importation of food and other necessities. Another was the probability that the local people would abandon their plantations and let them revert to wilderness as soon as a rise in the price of rubber made it feasible to run into the jungles again in the search for wild wealth. A third was that the food tastes of the local inhabitants, as well as their social prejudices according to which it was much more genteel to eat imported foods than to grow vegetables at home, militated actively against the system, except as a depression tideover.

At many times in the past, government itself seems to have prevented and actually set back Amazonian development for the purpose of maintaining the status quo. In the latter part of the eighteenth century, on the same Rio Negro, an able and energetic governor whose name was Lobo D'Almada, succeeded in fostering the same kind of integrated development that is looked for today in connection with possible post-war colonization. Tirelessly, he sponsored agricultural progress, especially around the city of Barcellos, and his subjects were successful with such crops as tobacco and various foodstuffs. He fostered the building of factories throughout the region, and soon the country began to ship appreciable quantities of dyes to Portugal. He was an indefatigable traveler as well as an administrator,

explored the Rio Branco and some of its tributaries, and established the cattle culture that still exists on the plains at that river's headwaters. Under his energetic guidance, and in part because of his military achievements in protecting the colonists against marauding Indians, the population as well as the prosperity of the Rio Negro basin went up by leaps and bounds. Eventually, however, he was recalled in disgrace, at the instigation of the colonial interests whose business was interfered with by the development of local industries. The results of his labors were allowed and encouraged to slump, and the river once again reverted to a wilderness area with a colonial economy.

FOREIGN INFLUENCES

There are indications, too, that powerful foreign influences have long been at work to prevent the development of the Amazon basin. The nineteenth century was a time of intense international rivalries for colonial possessions and spheres of influence, and the United States was not wholly disinterested. During that period, when one exploring naturalist after the other was busily proclaiming the wealth and beauty of the Amazon basin, we were a rapidly expanding nation, looking not only for new frontiers to conquer, but also for new regions that might absorb our "surplus" Negro population at a time when slavery was our outstanding political problem. Accordingly Lieutenant Herndon and Midshipman Gibbon of the United States Navy were sent on an expedition throughout the entire basin; after the Civil War we made a hydrographic survey of some of the Amazonian rivers, and investors were encouraged to obtain large concessions in the region, while Dom Pedro II, emperor of Brazil, did much to "open" the Amazon by proclaiming it an international highway. In those days we were on a footing of rivalry rather than friendship with the British, who were vigorously searching for sources of tropical raw

materials. Only later, when we made our economic peace with the British Empire, did we lose interest in the Amazonian regions.

THE MADEIRA-MAMORE RAILROAD

One North American who received large concessions in the heart of northern South America was Colonel George Earl Church, whose grants in eastern Bolivia imposed the duty to build the Madeira-Mamoré railroad—around the rapids of the river system of the same name—which was to afford eastern Bolivia an outlet to the Amazon and so to the Atlantic. The first attempt to build that important railroad was started in 1871 by a British Company, and given up again a few years later. The second attempt was begun early in 1878 by the Philadelphia firm of P. & T. Collins, and was the first large foreign construction job ever undertaken by a North American concern. It ended a few years later, in tragic failure, with many lives lost, and with very little actual construction accomplished. That failure has generally been ascribed to the nature of the country. There have been some, however, the contractors among them, who ascribe it to the fact that the funds for the enterprise were tied up by litigation in the Bank of England, and the contracting firm accordingly went bankrupt. Undoubtedly the nature of the country—or rather, lack of experience in dealing with it—had much to do with the failure; but the lack of funds, which was caused by international rivalries, was also an extremely powerful reason. The Madeira-Mamoré railroad was finally built early in the present century, as part of a settlement of a boundary dispute between Bolivia and Brazil, and for a time it served the region's colonial purposes. The forests of eastern Bolivia, around the lower Beni, are among the richest in rubber in the entire Amazon basin; the firm of Suarez Hermanos, established on that river since 1882, was the Hudson's Bay Company that gathered rubber

from the forests, shipped it out via the railroad, and in return shipped in foodstuffs and other necessities. When the rubber boom collapsed, the railroad began to decline. When the world depression came along, the British operating company gave it up as a hopeless proposition and turned the management over to the Brazilian government.

A NEW ECONOMY FOR THE BASIN

At the same time, however, a curious change took place in the economy of eastern Bolivia. With rubber out of the picture, shelled and canned Brazil nuts, involving much hand-labor and therefore some progress toward industrialization, began to be developed as a substitute export corp. At the same time, steps were taken toward a local sugar culture, protected by tariffs, to provide Bolivia with sugar, and toward the kind of well-rounded agriculture that would produce foodstuffs for local consumption and therefore reduce the export of moneys for imported foods.

In other words, along the lower Beni as well as elsewhere in the Amazon basin, the depression caused a start toward sound economic development. Whether it had previously been impossible because of the country's nature, or because colonialism had been so firmly intrenched as to be able actually to prevent it, is a moot question. But certainly a new attitude toward the Amazon basin is today apparent in the Amazonian nations, which are finally turning their thoughts toward something more constructive than the old, swashbuckling, wild and wasteful El Dorado colonialism. Peru's new Tingo María road, and Brazil's first steps toward government-fostered agriculture are indications of the feeling that is growing throughout South America (whether rightly or wrongly), that the days of ruthless colonial exploitation are over, and the South American nations must now begin

to take active steps toward the all-around development of the Amazon basin.

That attitude is shown, also, in Brazil's actions during the present wartime rubber boom. Some of the rubber has been obtained through direct North American efforts; some of it through Brazilian efforts, private and governmental. In this program, Brazil shipped in workers with their families, subjected them to health inspections, vaccinated them, and gave them small plots of land on which they could raise their own foods while gathering rubber in the jungles as a cash crop. These methods were an obvious attempt to encourage a stable population, rooted in agriculture and the local production of foodstuffs.

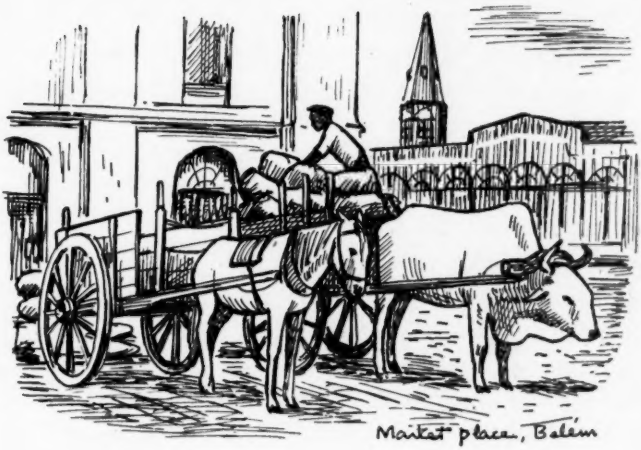
COLONIALISM VS. TRUE DEVELOPMENT

The same struggle between colonialism on the one hand—maintaining the El Dorado psychology of searching for wild wealth—and genuine development on the other, clearly marks the entire history of the Amazon basin. Toward the end of the eighteenth century there was a Jesuit priest on the upper Orinoco, whose name was Padre Gumilla. He was established at the then important mission post of Esmeralda which was in those days still an outfitting point for El Dorado expeditions. In his book on the Orinoco River, he paid much attention to the El Dorado legend, but also made merciless fun of the gold-seekers on the grounds that if they paid half as much attention to developing the country as they did to tearing it apart for El Dorado, they would in the end grow twice as rich as even the finding of the golden city could make them. That reasoning is only now beginning to affect the policies of the various Amazonian nations. Locally famous, too, is a North American, who in his own life and with surprising results, embodied the almost universal struggle between the fortune-seeker and the true settler.

THE SAGA OF OLD MAN STONE

He was known as "Old Man Stone," and he died around 1920 in the Amazonian town of Itacoatiara, at the age of about ninety. As a young man he had caught the gold fever and had boomed to California. However, he arrived too late, and sailed for Australia, whence had come reports of a fabulous gold strike. He arrived too late in Australia, too, and sailed for Peru because he had heard that tremendous new gold finds had just been made in that country. In later years he claimed that the Peruvian strike had been invented in Australia in order to get rid of the indigent miners who had failed to find gold. At any rate, he found nothing in Peru but another El Dorado story, which he followed over the Pichis trail to Iquitos, and thence down the Amazon River. At Itacoatiara he came to his senses, and decided that settling down to develop the land was likely to be far more profitable than constantly chasing after quick wealth.

Itacoatiara, which lies some 800 miles up the Amazon on the river's north bank, owes him a debt of gratitude. He acquired land and started plantations, probably of tobacco, sugar, cacao, pineapples, and other foodstuffs. He prospered and labored to transmit his ideas about the good life to the rest of the town. He planted gardens, cleaned up the streets, fostered municipal improvements, and played a large part in making the town one of the most pleasant settlements on the entire river. Moreover, through living in health to past ninety, he became one more demonstration—of which Nicolas Suárez on the Beni River, J. G. Araujo in Manáos, and the cattle ranchers on Marajó Island are others—that he who lives an active, normal life of physical and mental activity has little to fear from the so-called debilitating influence of the tropical climate.



7. The Problem of Food

During the nineteenth century it was fashionable to talk about the tropics as the most fertile areas on earth, and about the Amazon basin as potentially a "breadbasket" for all humanity, requiring only colonization and the clearing of the forests to enable it to feed half of mankind. Unfortunately for that glowing picture, tropical soils in general are among the world's *least* fertile, because they are unusually subject to leaching and erosion by the prevailing torrential rains. This fact is used by some as an argument *against* any large scale development in the Amazon basin, their contention being that the basin could never hope to compete with such areas as our own Great Plains in the production of foodstuffs.

WHAT CAN THE BASIN'S SOIL PRODUCE?

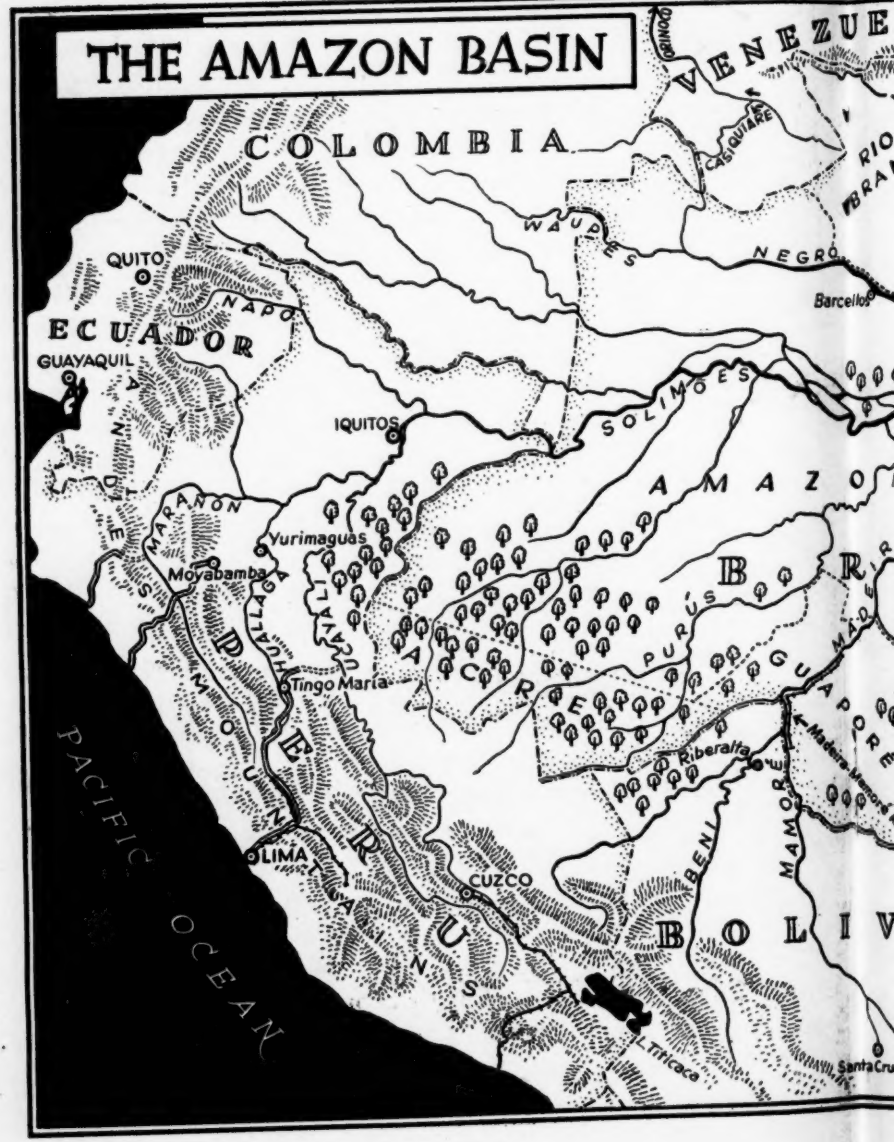
One answer is that no realist today thinks of the region as one of the world's potential "bread baskets." In present thinking, it

is enough if the basin can produce approximately sufficient foodstuffs for the needs of its own inhabitants, who, whatever their race or color, could then devote themselves to exploiting the tremendous wealth of the Amazonian forests and the minerals of the highlands. There are some who deny even that possibility, basing their claims on calculations of the number of calories that can be produced by various soils in various climates, and maintaining, as an example, that it will always be cheaper to ship in potatoes from Idaho or Maine than to produce them locally. But man does not eat either statistics or calories; he eats specific foods in accordance with his habits and desires, as shaped, in the end, by what he finds available. There is no denying that immigrants to the Amazon basin from Europe or North America would have to face the always unpleasant task of changing their food habits, if only because such imported items as wheat, flour and potatoes spoil much faster in the humid tropical climate than do locally produced foods. However, while tropical soils, in general, are relatively infertile, the same soils also produce, as if in compensation, some of the most nourishing and concentrated vegetable foods known, which often have the additional advantage of spoiling less rapidly in the tropical climate than do imported foods. Where the temperate regions and the north are rich in animal fats, the tropics are far richer than the other zones in starches and vegetable fats. For unit food value few vegetable foods on earth can compare with manioc, plantains, avocados, brown sugar, and Brazil nuts, while rice is one of the great staples of the south because it can be grown in enormous quantities on tropical soils and can be stored and transported with little fear of rotting. Moreover, the kind of tariff barriers that today keep Argentine beef from underselling our own in the markets of New York and Philadelphia, may eventually operate in the same way to protect the products of the Amazon basin.

Finally, all generalizations about fertility or lack of it break down in the face of the basin's size, and nobody can at this time foretell what shape and direction any future development will take. The fact that it would be as foolish to expect the leached soils of the middle Orinoco River to produce vast quantities of food as it would be to expect the Dakota Bad Lands to do the same, should no more condemn the possibilities for the entire basin than the recognized infertility of Death Valley means that the United States never had a chance for economic development. Even the most pessimistic agree that the banks of the lower Amazon—the thousand miles from the Rio Negro to the mouth—can be made to produce untold millions of tons of rice far more cheaply than that commodity is now produced in Louisiana, and that the temperate climate valleys on the eastern slopes of the Andes, once transportation facilities are supplied, should be able to support large numbers of settlers and pour foodstuffs into the Amazonian lowlands.

A PROMISING OUTLOOK FOR THE FUTURE

Those are the most pessimistic claims. Rosier ones are made to the effect that the cattle plains of Marajó Island and Brazilian Guiana could, by the same methods of scientific ranching that are practiced in our own West, be made to produce many times what they do at present, and that the construction of a few overland highways would make thousands of square miles of empty prairies available for further ranching. Brazil's Acre Territory is not only one of the richest rubber areas in the entire basin, but also produces enough food for its own needs, with an export surplus for Peru. The eighty plantations that flourished on the Napo River during the last rubber boom, and the dozens that thrived at the same time along the Marañón are examples of what can and does happen to the "fertility" of the soil whenever markets exist


THE AMAZON BASIN
VENEZUE
COLOMBIA
ORINOCO
ESQUIARE
RIO
NEGRO
WAUPES
Barcellos
QUITO
NAPO
ECUADOR
GUAYAQUIL
ANDES
IQUITOS
SOLIMOES
AMAZO
MARANON
Yurimaguas
Moyabamba
HUALLAGA
UCAYALI
Tingo Maria
PURÚS
MADEIRA
GUAPORE
Riberalta
Madeira
Mamoré
MAMORE
BENI
PACIFIC OCEAN
PERU
LIMA
CUZCO
BOLIV
L. Titicaca
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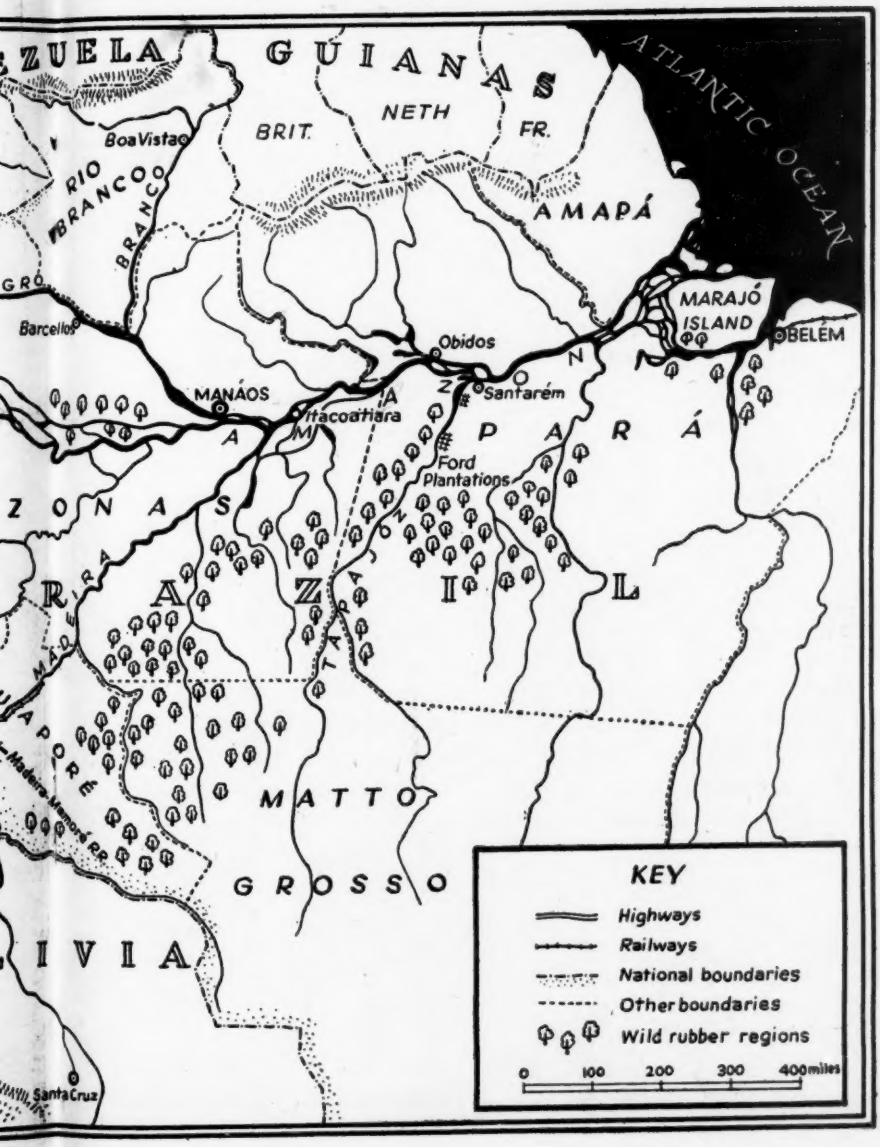

ZUELA
GUIANAS
BRIT.
NETH
FR.
ATLANTIC OCEAN
Boa Vista
RIO BRANCO
AMAPÁ
MARAJÓ ISLAND
BELÉM
Barcellos
Obidos
MANÁOS
Santarém
Itacoatiara
PARÁ
Ford Plantations
ZONAS
AMAZONAS
MATTO GROSSO
Madeira-Mamoré RR.
IVIA
Santa Cruz
KEY
Highways
Railways
National boundaries
Other boundaries
Wild rubber regions
0 100 200 300 400 miles

for crops. Moreover, Japanese settlers along the lower Beni and elsewhere have in recent years had very good success with vegetable and truck farms.

Hence, it is certain that despite the relative poverty of Amazonian soils in comparison with those of our corn belt, enormous quantities of foodstuffs can be produced successfully all along the basin's fringes, on the Andean slopes in the west, in the Beni River valley in the southwest, in the valleys leading up to the Matto Grosso Highlands in the south, and on the Guiana Highlands in the north. When it comes to the Amazonian lowlands themselves, the mere fact that Orellana there found hundreds of thousands of Indians, living by agriculture, is an indication that even that region has possibilities.

The role that agriculture is expected to play in any possible post-war Amazonian boom is mentioned by the Brazilian writer, José Jobim, when he says:

> "The big state of Amazonas has practically no agriculture. In fact, one of the essential features of Joao Alberto's plan for the development of its rubber plantations is the establishment in that region of conditions encouraging agriculture as a permanent activity. The plan includes the organization of a university in Santarém as well as the expansion of the Instituto Agronomico already in existence."*

* From José Jobim, *Brazil in the Making*, 1943, p. 51. By permission of The Macmillan Company, publishers.

8. The Indians

The present wartime rubber boom has inevitably brought about increased troubles with the aboriginal inhabitants. There are still wild Indians in the basin who occasionally kill people. And there are some white men who, because of the prevailing shortage of labor, have tried to lure or force the wild Indians into working rubber. The latter have generally too vivid a memory of the atrocities practiced during the last rubber boom to start working for the white man again; the result is mistrust and sometimes bloodshed. As late as 1942, one massacre of whites by Indians was reported at the mouth of the Rio Branco, while along the Ventuari the Maquiritares killed six or seven whites who had gone in with trade goods to lure them into the rubber camps.

Such occurrences, which will undoubtedly be accelerated in the event of a large-scale development program, do serve as a deterrent to true colonization. Reports of the one massacre on

the Rio Ventuari alone served to slow down the rubber program along the entire Orinoco by scaring the workers, causing them to go into the woods by twos and threes instead of alone and to spend at least as much time and energy looking about for hostile Indians as tapping rubber. But it is also true that difficulties with the Indians in no way prevented the colonization and development of North America, and that the South American governments are fully aware that a realistic Indian policy, including the protection of settlers, must inevitably be a part of any development plan, even though there are by now many large areas where there is no possibility of molestation by Indians.

WHAT FUTURE FOR THE INDIANS?

That the wild Indians would suffer in the event of a colonizing program is almost a foregone, if tragic, conclusion. The kind of enlightened policy that the Danes practiced in Greenland, under which the Eskimos were regarded as children and carefully protected as such, is impossible without a government-enforced quarantine that keeps white men out of the region. The kind of policy that the Soviets have instituted in Siberia, under which the aborigines have absolute equality of opportunity with the whites, guaranteed and enforced by the government, has hitherto not marked the thinking and functioning of our kind of society, especially where they are needed for "cheap labor." Nevertheless, the modern Amazonian nations have in general practiced Indian policies that are far more lenient and humane than the policy of extermination that characterized the development of North America, and that of enslavement alternating with extermination that was practiced in the earlier days of the Amazon basin. Brazil's prevailing policy, developed by the great explorer General Rondon, himself part Indian, is one of protecting the Indians,

overcoming existing mistrust through kind treatment, and gradually persuading them to work for wages.

WHAT KIND OF PEOPLE ARE THE INDIANS?

How well such a policy will work in the event of a large-scale colonizing movement is something that nobody can foretell. Commentators are as divided on the nature of the Indians as they are on everything else about the Amazon basin. The classic and persistent view is that the aborigines are a poor, lazy, and sickly lot, so proving that the climate is inimical to any kind of human existence. A more modern view is that they are a fine and energetic people who have mastered their environment and have therefore much to teach white men about how to live there.

So, for instance, Waldo Frank, to whom the tropical forest is "an angry maze of struggling lianas, ferns, flowering moss and bush, rising from the dead leaves in conflagration; flaming to brush and brake which writhe for air among themselves under the lesser trees," dismisses the Indians as follows:

> "The Indian himself does not thrive, has never thrived in this world. Compared to his brothers, brilliant or substantial, on the west slopes of the Andes or even to the Indians of the sertões and of the mild Paraguayan wood, the Amazon Indian is weak, fragile, nervous, shallow; his eyes are of a hunted beast, just intelligent enough to live a life of perpetual escaping.
>
> "He has created no culture, all his energy is submerged in the battle for bare survival with a world whose furious energy of fire, water, and wood is too much for him."*

Caryl P. Haskins, on the other hand, expressed precisely the opposite view:

*Waldo Frank, *South American Journey*, Duell, Sloan & Pearce, 1943. P. 302.

". . . the tribes which settled along the lower Amazon adapted themselves extraordinarily well to their environment. It would appear that through their history they made a number of discoveries and inventions which were quite unknown in the Old World, in North America, or even in other portions of South America. They discovered many wholly new cultivable plants, comprising some of the most important food species of the American continent. For example, they developed the method, and invented all the equipment necessary for utilizing the poisonous manioc as food. They learned to extract poisons, such as curare, and to prepare and use various naturally occurring narcotics. Rubber was discovered and was put to various uses, . . ."*

When Francisco de Orellana first descended the Amazon in 1541-42, he found on its banks literally hundreds of Indian villages and a number of aboriginal "nations." Indeed, Fray Gaspar de Carvajal's account of the voyage consists to a large extent of descriptions of the Indian habitations. He tells of settlements with gleaming white houses, laid out in orderly streets, with plazas and temples, and in several cases with "many fine roads" leading inland to inhabited agricultural areas. He describes the beautiful pottery ware that he and his companions found in some of these settlements, textiles of cotton and other fibers, gold and silver ornaments that were presumed to have come from inland mining areas. Repeatedly he also tells of the courage of the Indians, and of the energy and organization with which they attacked the invading Spaniards.

SCIENTIFIC ACHIEVEMENTS

That picture of an energetic and intelligent people, well adapted to their environment, emerges from almost any serious study of

*From *The Amazon: The Life History of a Mighty River*, by Caryl P. Haskins, p. 39. Copyright, 1943. Reprinted by permission of Doubleday, Doran and Company, Inc.

the Amazonian Indians and their history as opposed to the kind of poetic generalizations that usually express the strangers' terrors rather than those of the Indians'. Indeed, there are observers, the present writer among them, who maintain that the Amazonian aborigines, in view of their numerous important contributions to our own technical culture, deserve to be ranked among the world's great scientists. Many of our own outstanding scientific achievements were simply borrowed from the Amazon's dark-skinned "savages" and then refined to fit in with the mass-production needs of an industrial world.

QUININE AND ROTENONE

The problem of malaria, for instance, has bedevilled white men since first they invaded the tropics, and there are those who claim that the colonization of such areas as the Amazon basin is made impossible by that disease alone. Yet the Amazonian Indian has obviously done what our own scientists have not yet been able to do, has "conquered" malaria to the point where it is no serious problem to him as long as he is permitted to live his own life by his own time-honored techniques. To us the suppression of malaria is a matter of energetic public health programs. The Amazonian Indian, on the other hand, lives in such a way that he has no need for the kind of program that is implied in the word "conquest." Moreover, the same Indians gave us the one drug that we today regard as the most certain preventative and cure for malaria, namely quinine. A number of modern experts maintain, with much evidence on their side, that we could easily master the disease if we combined the use of quinine with adherence to the more important features of Indian living techniques, especially in the fields of diet and strenuous physical work.

Moreover, quinine and its synthetic substitutes are not the only drugs important in the war on malaria. The search for insecticides

has been intensified immeasurably in recent years. One of the most important recent discoveries in that search is rotenone, which not only kills insects faster and more effectively than almost any other known drug, but has the added advantage of being harmless to human beings and so of great potential importance for the spraying of fruits and vegetables. Rotenone came to us out of the Amazon basin only in the last decade or so, but the Indians of that country had known it and used it for generations.

Along with our search for insecticides, we are today, and as part of the war effort, intensifying our search for a really adequate insect-repellent, which, while it may not kill malaria-bearing mosquitoes, would at least discourage them from biting. There, too, we are beginning to realize that the Amazonian Indians have long had a number of such repellents, obtained from various plants.

OTHER INDIAN CONTRIBUTIONS

Cocaine, essential to medical practice throughout the world, was given to us by the Amazonian Indians as an ingredient of the coca plant whose qualities they first discovered and utilized.

Only in the last year or so have our scientists learned to standardize curare, the universal arrow-poison of the Amazonian Indians, and so to make it available in reliable doses for the treatment of such ailments as spastic paralysis and lockjaw. For curare is potentially important to medicine as one of the world's best "relaxing" agents, being fatal only in concentrated form, when it relaxes its victim into what seems to be an extremely humane death. And many an observer who is aware of the complete silence with which the Amazonian blowgun operates, wishes that we had some similar weapon for use in our jungle warfare, where positions are often revealed by the flash and the noise of firearms.

Every year explorers bring out new rumors of "new" drugs that the Amazonian Indians have either just discovered or have been using for centuries, and that deserve investigation on the basis of their possible usefulness to the white man's world.

The hammock, first invented by the Amazon Indians as a light, portable, and extremely comfortable piece of tropical furniture, and then "improved," gadgeteered, and debauched by us to the point where nobody can sleep comfortably in any one of its numerous "civilized" versions, is another important contribution to tropical hygiene. No one who has slept on soggy cots and mattresses in the humid tropics, and has experienced the inevitable consequences of such masochistic adherence to convention, denies that prickly heat and similar painful skin infections form a serious deterrent to comfort in the tropics. By the same token, few who have become accustomed to the wide, Amazonian type of Indian hammock, ventilated on all parts of their bodies, and secure from crawling insects, have failed to proclaim it as the best and most comfortable tropical sleeping equipment ever invented, and by far the best safeguard against such ailments as prickly heat.

The manioc that Haskins mentions as having been invented by the Indians, a form of which is our own tapioca, has by now spread throughout the tropical world as an essential food staple that combines qualities of great nourishment with resistance to insects and rotting. Our past expansion into the tropics as well as our possible future expansion in the Amazon basin, is based to a large extent on that food, which was first ingeniously extracted by the Amazon Indians from a plant that is deadly poison in its fresh state.

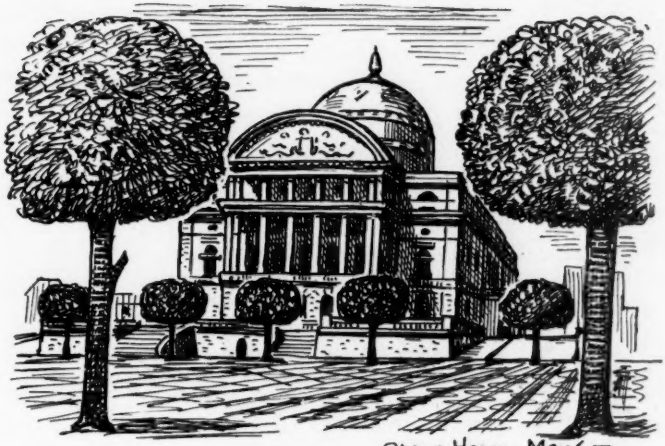
DIVERSITY OF INDIAN CULTURE

A mere cursory survey of the hundreds of Amazonian tribes, belonging largely to three great stocks, namely the Tupi-Guarani,

the Arawak, and the Carib, discloses that no one generalization can possibly cover them all. One need only to travel a few days with the ribald, healthy, and energetic Indians of Carib stock near the upper Orinoco—without whose help many a white traveler would be unable to get along at all—to wonder how the poetic concept of fear-ridden beasts was ever accepted. One need only notice how such manufactured specialties as curare and graters for manioc often travel hundreds of miles before reaching their final consumers, to recognize the existence of a functioning commercial organization, and to question the common concept of a lack of organized culture.

On the upper Orinoco, for instance, white residents have long bought their muzzle-loading shotguns from the "wild" Maquiritares on the Ventuari, preferring them to the ones that they obtained from the German traders at Ciudad Bolívar. These Maquiritares obtain the firearms from even wilder Indians to the east, who have themselves obtained them—in the devious courses of Indian commerce—from Indian brokers and Indian travelers, passing them from hand to hand on the long overland journey across country that is often still unexplored, from the gold fields and diamond washings of British Guiana.

Finally, one need only visit the intelligent and physically powerful agricultural Indians on the Waupes, and see how they make slaves of the inferior and stunted members of neighboring forest tribes, to realize that tremendous physical and intellectual differences exist between Indian and Indian, tribe and tribe. The same degrees of difference that existed in North America between such groups as the Mandans of the Dakotas, the Mohicans of the East, Zuñis of the southwest, and the Clam Diggers of the Pacific coast exist between the various aborigines of the highly varied Amazon basin.



Opera House, Manáos

9. White Settlers in the Tropics

Just as, during the Middle Ages, educated men were convinced that man could not live in the tropics at all as he was certain to be scorched to death by the burning sun, so many modern scholars adhere firmly to the concept of the debilitating tropical climate, which is held to bar all possibility of Amazonian colonization, except in so far as modern techniques might make it possible to build and maintain air-cooled villages for the potential settlers. That concept is based on the following fundamental principles:

(1) Both the actinic rays of the sun, reacting on light skin, and the monotony of the tropical warmth, have such unfavorable effects on the health of white men that the latter can only live in the tropics temporarily, must send their children to school in more favorable climates, and must themselves return to such climates before too long, for fear of being permanently debilitated and demoralized.

(2) While living in the tropics, a white man must take pains to shun the same sun that he welcomes as being healthful in other parts of the world, must avoid the same physical labor that he finds healthful elsewhere, and must medicate himself constantly as protection against tropical diseases.

(3) By the same token, all physical labor must be done by native colored races, inured to the tropical climate, and those tropical areas where no adequate bodies of colored workers exist must either be "stocked" with such people as African Negroes or remain forever undeveloped.

SCIENTIFIC DOGMAS AND THE CASTE SYSTEM

Around such scientific fundamentals, there naturally grew a whole body of social dogmas, supporting a rigid caste system. Or perhaps it happened the other way around, with the scientific dogmas developed to buttress the caste system. The cork-helmet and the flannel spinal pad became not only necessary protections against the sun, but also social badges of the white man's superiority; the Englishman in Africa who used to rush outdoors to clap a helmet on the head of anybody thoughtless enough to walk around bare-headed even on a cloudy day, was as much concerned with having to "keep face" before the natives as with the health of his unfortunate victim. The injunction against physical labor, comfortably supported by science, was enforced all the more rigidly because of the same need to "keep face."

In the Amazon basin (and undoubtedly elsewhere) dietetic habits that still persist were formed by precisely the same need; Indians might plant and eat fresh vegetables, but the white man who wanted to keep face, and therefore also his self-respect, had to make the Indians gather rubber, quinine, palm-fibers, Brazil nuts, and palm nuts for him, which were thereupon shipped to the outer world in return for imported foodstuffs. The fact that

there is little or no refrigeration in pioneer country meant that those imported foods were largely dried, which wrecked health in wholesale lots and therefore, in the complicated workings of much scientific thought, became still further proof that the tropical climate is inimical to the health of whites. The fact that the Indians tended to stay healthy, while breaking all the known rules for staying well in the tropics (but not elsewhere), was explained in part by the coloring of the Indians' skin and their relative immunity to endemic diseases, developed through millennia of residence in the region.

That comfortable system of argument naturally attracted many people to the tropics who were looking for places where they could amount to something by merely being white men, and grow rich by doing no work at all. When such people began to deteriorate, as they usually do in the end, regardless of where they are, they also became living examples of the fact that the tropical climate is deadly to the health and well-being of whites.

MODERN WARFARE IN THE TROPICS

Today it comes as a surprise to Americans to learn that precisely those same arguments, which have long stood in the way of tropical development, were once used to "prove" that Florida could never become an integrated part of the United States where North Americans can make their real homes. It also comes as an unpleasant surprise to many Englishmen to learn that, in order to win back the tropical empire that they have temporarily lost to the Japanese and in order to hold it as their own thereafter, they must discard almost the entire structure of their thinking about the debilitating tropical climate. Japan took Singapore through its jungled back door, because, in part on the basis of the ideas outlined above, the jungled tropics had previously been considered impassable in a military sense; neither we,

nor the British, nor the Australians, could carry on the fight that we are now carrying on in the tropics if the old-time orthodox ideas about tropical health and hygiene were correct.

Indeed, so far have we come in a few years' time from the old concept of having to shun the tropical sun at all times with such protective devices as cork helmets and spinal pads, that modern physiologists, advising modern armies on tropical clothing, work on the dictum that, as far as weather alone is concerned, no clothing whatever is always far better in the wet tropics than any clothing that can be devised. So, under the desperate need of the war, we are beginning to recognize at last that the tropical "savage" has been living the way he has, not out of ignorance but out of the wisdom gathered through thousands of years of adaptation.

A CONVENTIONAL TROPICAL SETTLEMENT

The first great breach in the orthodox thinking about the evil effects of the tropical climate was made in Australia as a matter of government policy. During and after those same gold-rush days that lured "Old Man Stone," later of Amazon River fame, northern Australia was typical of the unhealthfulness of tropical climates everywhere. Malaria, hookworm, and dysentery raged in Queensland, heat and humidity were depressing. Settlers followed the early gold-rush boomers; they took up land and devoted themselves to growing sugar. Since the Australian aborigines are poor workers, and since it was well known that white men could not do the heavy physical labor involved in cutting cane in the tropics (although they were and are doing it in such places as Puerto Rico and Cuba), Chinese and Kanaka laborers were imported by the thousands and put to work on the plantations at abysmally low rates of pay. The arrangement worked about as well as it did elsewhere; the whites made money but

paid a price for it in bad health, deterioration, malaria, dysentery, and other troubles. Queensland became another proof of the debilitating effects of the tropical climate.

THE QUEENSLAND EXPERIMENT

However, early in the twentieth century the Australian government began to take a climatically unorthodox view of the Queensland sugar culture. In effect it argued that a large body of underpaid, underprivileged workers constituted a menace to the Commonwealth. Some day a strong Asiatic power might come along, convince those people that the whites were not treating them very well, and then have little trouble in occupying vast stretches of Australia. Moreover, the legislators said, large bodies of exploited colored laborers, existing in squalor and degradation under abysmally low standards of living, are an internal social and hygienic menace to the nation harboring them, as demonstrated by the Negro problem in the United States. Hence was formulated the famous "White Australia" policy, which almost brought about the secession of Queensland.

Under this policy, and to the tune of dire warnings from scientists throughout Europe and America, the Chinese and Kanaka laborers were repatriated, while every encouragement was given to the immigration of whites into tropical Australia, to take their places. These whites were encouraged to live lives that were in every way normal, working as laborers on the plantations, taking up land of their own, building homes, schools, and roads, raising their children and taking care of their old, in the ordered procession of every permanent settlement. They were encouraged to make their true homes in the tropical Australia, rather than to live there merely as temporary sojourners.

The results have astonished a number of climatologists. The

white settlers in Queensland have not found it necessary to leave the tropics every few years for a change of climate, or to send their children to school in some "better" environment. They live substantially as white settlers do in the temperate zones, unguided by any special rules on how to stay healthy in the tropics. At the same time Queensland has changed into the most healthful part of Australia. It is no longer necessary for residents to take quinine against malaria, or to follow the orthodox rules of protection—once considered necessary in Queensland as well as elsewhere in the tropics—against hookworm and dysentery. Rising standards of living, normal lives, adequate diets of locally produced fresh foods, and the usual sanitation measures found elsewhere in civilized communities, have done away with such ailments exactly as they have done away with them as menaces to public health in Florida.

NEW VIEWS ON TROPICAL HYGIENE

With those lessons, well documented in A. Grenfell Price's important book *White Settlers in the Tropics*,* scientists began to change their prevailing views on the effects of the tropical climate on whites. Today it is quite commonly agreed (with some scientists still stoutly maintaining that the case is not proved) that:

(1) So far from maintaining the white man in health by doing his work for him, large bodies of colored laborers, working under substandard conditions, actually endanger health by forming reservoirs of disease brought on by low standards of living.

(2) Much bad health in the tropics is caused primarily by malnutrition, which lowers resistance to other ailments. Wherever malaria and hookworm exist as serious public health prob-

* A. Grenfell Price, *White Settlers in the Tropics*, American Geographical Society, 1939.

lems, as in Puerto Rico and our own South, they go side by side with malnutrition.

(3) There is no urgent need to fear the tropical sun. Sunstroke and heat prostration are at least as common in the arctic as in the tropics.

(4) Physical labor is almost an essential to health in the tropics.

(5) Leading a normal, active life, without having to be guided by the social necessity for "keeping face" before colored laborers, being able to do away with the artificialities imposed by the old rules for tropical living, also helps to do away with the "tropical neurasthenia" that was once common in the so-called torrid zones and was ascribed to the deteriorating influence of the climate.

HEALTH IN THE TROPICS—AMAZONIAN MODELS

Such thinking is beginning to affect the Amazonian problem. A recent Peruvian medical mission, which studied health problems in the Peruvian part of the basin, remarked that the Indians, who live what we would in the temperate zones consider normal, healthful lives—doing their own work, planting their fields, eating fresh foods, and wearing a minimum of clothing as protection against the tropical sun—are but little affected by such ailments as malaria and hookworm, while the neighboring whites, who tend to live by the convention-honored tropical techniques, suffer badly from them. Moreover, such white men as the robust ranchers and cowboys of Marajó Island, who are forced to live active lives in the saddle without fear of the sun, are being pointed out as examples that one can live an active life in excellent health even on the equator. Nonagenarians like Stone and Nicolas Suárez—the late commercial king on the lower Rio Beni—who all their lives did their work without bothering either with air-conditioned houses or special rules for tropical living—also serve as examples.

Similarly, the late Dr. Bailey Ashford of Puerto Rico, world-famous as one of the greatest experts of modern times in tropical hygiene, maintained stoutly that the two great scourges of tropical settlement, hookworm and malaria, are intimately tied up with diet, as demonstrated statistically by the fact that all the world's great belts of those two diseases are also areas where, for economic or other reasons, malnutrition is rampant. In several conversations with the author, he insisted that hookworm becomes a minor ailment as soon as a few elementary hygienic precautions are combined with the diet of fresh foods that is regarded as essential to health also in those parts of the world where hookworm is no problem at all.

In other words, under the impact of drastic changes in modern thinking about the tropics, immeasurably strengthened by military experiences in the present war, *the concept of the debilitating tropics is rapidly disappearing as a barrier to Amazonian colonization.*

"THE THIRD BANKRUPTCY"

That does not in the least mean that the Amazon basin is a health resort, and that any large-scale settlement there would be without its setbacks, failures, and tragedies. Pioneering in new country is still among man's most hazardous occupations, perhaps second only to war in the number of its casualties—physical, financial, moral, and mental. One of the world's best-known and most powerful international bankers recently expressed to the author the view that an imminent colonization and development program in the Amazon basin is almost inevitable, but that bankers, as such, will not be interested in it until the early spade work has been done, and "after the third bankruptcy." Malaria, hookworm, dysentery, tropical ulcers, yaws, beri beri, yellow fever, etc., are still common in the forest heart of South America just as

"the ague," "milk fever" and many other diseases were rampant in North America in pioneer days. It is recognized that they will take their toll, and must be dealt with through such active campaigns of public hygiene and education as are now already being carried out as part of the wartime rubber program. But it is also recognized that their seriousness will lessen materially as one area after another becomes settled, as standards of living begin to rise, and as settlers begin to consume fresh, locally-produced foods instead of living on imported canned goods and such dried staples as beans and rice. First-comers in any large-scale pioneering rush will have no easy time of it; even in his war against the wilderness, man must have many troops who are little more than cannon fodder.

A Solimões trading post

10. Human and Financial Problems

Three questions that are often raised in connection with all possible post-war pioneer movements in the Western hemisphere are:

(1) Will European refugees, and possible North American unemployed, *want* to move into the pioneer areas to make new homes for themselves?

(2) Will the nations concerned want them?

(3) Where is the needed money to come from?

The answers to all three lie in that same realm of unpredictable "ifs" in which is found the answer to the whole larger problem of whether or not the Amazon basin will be developed at all.

The colonization of the Amazon basin is a distinct possibility, provided the Amazonian nations, and especially Brazil, see it as both feasible and desirable as an essential part of their own national development. If so, it can be expected to start not with a

great rush but slowly, and at first with Latin American settlers who are more adaptable than Europeans and North Americans in that they do not demand as high a standard of living and do not carry with them as great an overburden of pessimistic "knowledge." The whole idea of the debilitating effects of the tropical climate, for instance, would come as a great surprise to thousands of those Latin Americans who have through the centuries lived normal and healthful lives on the Amazon and elsewhere in the American tropics.

WILL FOREIGN SETTLERS BE WELCOME?

Whether or not the Amazonian nations will want settlers from Europe and North America will depend in part on the speed with which any colonization program gathers momentum, and therefore on the number of people who may be needed for it. Certainly there has in recent years been much talk throughout Latin America to the effect that the technical skills and resources of European refugees may prove a boon to the Western hemisphere by adding materially to its development. On the other hand, past attempts at Amazonian colonization by such foreigners as Germans, Italians, and especially Japanese, in national groups, have resulted either in failure or in serious political headaches, leading to the widespread conviction among the South American nations concerned that henceforth they would rather do the job with their own nationals, guided and helped by their own planned national efforts.

But that is a situation of the moment. Homogeneous foreign colonies are one thing; foreigners admitted individually as part of a large program are quite another. Existing immigration policies and laws cannot be regarded as permanent in a rapidly changing world. Every nation can change them as soon as it finds such a step to its advantage. Even in the years before the war there was

a powerful movement in the United States for the development of Alaska by European refugees; a number of our most eminent statesmen, sociologists, and others, at that time pleaded ardently for the abrogation of our own immigration laws as applied to that territory. The fact that the idea was not only advanced, but was advocated with skill and excellent reasoning in congressional committee rooms was extremely important as a sign of the times. There are many who claim that the same idea will present itself to the South American nations as soon as the development of the Amazon basin becomes desirable from a nationalistic viewpoint.

WHO WILL WANT TO GO TO THE AMAZON?

The question of whether or not Europeans and North Americans of European descent will ever want to go to the Amazon basin is equally unanswerable at present. It depends entirely on their alternatives. If post-war European affairs are so arranged as to take care of all European populations, no great rush of Europeans into the Americas can be expected. Pioneers are made not by any glowing and ardent desire to develop new country, but by such sufferings and troubles at home as make the strenuous and often dangerous life of the pioneer seem like a desirable alternative. The general history of colonization seems to show that the question of whether good pioneers can be made out of "city dwelling shopkeepers" depends principally on the question of whether or not they can go back to where they came from. Quite probably the development of New England would have been retarded considerably if the Pilgrims had been able to buy round-trip tickets on the Mayflower. Certainly, too, the sturdy Oklahomans who followed Alfalfa Bill Murray into eastern Bolivia in 1922—fine, energetic pioneering stock—made a dismal failure of their colonization venture as such, in part because they had their return tickets to Oklahoma in their pockets all the time.

THE SECOND GENERATION

Just as bankers may not be interested in Amazonian colonization until "after the third bankruptcy," so the success of a large-scale pioneer venture often depends on the second generation. The first settlers, accustomed to "better" things at home, hedged about by ideas about standards of living that do not fit their adopted country, are often extremely unhappy in their new environment. If, however, for one reason or another, they find it more expedient to stay where they are than to return to their old homes, they bring into the world a new generation to which the new environment *is* home, to be accepted, treated, and developed as such.

THE FINANCIAL PROBLEM

Similarly, the question of financing some possible Amazonian development, step by step, offers no insuperable obstacles. First of all it depends on the Amazonian nations themselves. At an accelerated pace in recent decades, those nations have built roads, maintained universities and agricultural experiment stations, carried on public health work, subsidized public housing projects, and passed tariff laws to protect this or that part of their various regional economies. Doing the same things in the Amazon basin, and so helping colonization there, would only amount to extending their normal activities into new country because the development of the new country seemed desirable to the nations involved.

Land-grants in regions that the respective nations want to develop, have always been a classic American way of rewarding soldiers returning from wars; Brazil's announced intention of playing a shooting role in the present war may similarly prove a powerful incentive to a post-war colonization program. Moreover, the practice of actually subsidizing European settlers by paying their fares and helping them financially to become established, is nothing new in the Western hemisphere. The United States did

it from time to time, Brazil did it when she wanted Germans and Italians in the São Paulo region; Chile, Peru, Colombia and other South American nations have done it again and again.

In the years before the war, the pressing refugee problem inevitably brought with it the problem of how to finance refugees for the finding of new homes. Considerable sums were raised as philanthropy, and it became evident in New York that many millions of dollars could and would be raised as soon as the action was taken out of the realm of charity and into that of long-term investment.

WILL THERE BE MONEY FROM THE NORTH?

There are definite indications, too, that much North American capital will flow into Latin America after the war, to finance Latin American business and industrial ventures. Most of our business leaders are aware that the old days of big concessions, financed, owned, and managed entirely by North Americans, are definitely over. The talk today is of such investment in, for instance, Brazilian, Peruvian, and Venezuelan enterprises as would not lead to complete control, but would leave a large share of the profits in the countries in question. Indeed, the United States Government itself seems to have done much to try to channel dollars into the twenty nations lying south of the Rio Grande. When the Coordinator of Inter-American Affairs some years ago sponsored the preparation and publication of guide books to all the Latin American Republics, his express purpose was to encourage a stream of tourists and other travelers to visit those countries, and leave dollar exchange behind that the Latin Americans could use for the development of their nations, and incidentally for the purchase of our goods, including machinery.

Whether such money is used for the development of the nations concerned, or of the Amazon basin, is merely a question of

language. Show an investor, either Brazilian or North American, a chance to make an eventual profit from the opening and colonization of new grazing lands, the construction of slaughter houses, refrigeration plants, steamers with refrigerated holds; show him a chance to make a profit by putting his money in rubber plantations that are encouraged by government policies, protected by tariffs, and made possible through new immigration policies, and he does not much care if those ventures are located in the Amazon basin or elsewhere. And there are many kinds of investors, from the rashest to the most conservative. The latter are just as avid as the rest to find outlets for their capital; they are merely holding back, waiting for the bargains that might be created by "the third bankruptcy."

11. Nationalistic Incentives

The problem of Amazonian colonization is to a large degree one of incentives. Human beings are by far the earth's most adaptable animals, able and willing to make their homes almost anywhere, given sufficient reasons. That the Amazon basin's climate and environment are far more suited to colonization than has been generally supposed is now becoming known; that it is one of the world's richest areas in natural resources has been known for centuries. The question of its development after the war, regardless of who the settlers are, therefore depends on whether the Amazonian nations now find it worth while and expedient to exploit that wealth to the full. That possibility must be evaluated in the light of the profound social and economic reorganization that, to varying degrees in the various nations, has swept all of Latin America in recent decades.

One of many reasons why the Amazon basin has retained through the centuries its status as a wild hinterland, exploited,

when at all, under the crudest kind of economic colonialism, is that the Latin American nations themselves have until recently operated under a colonial economy. By and large, they made a living by exporting raw materials in return for the manufactured products of other nations' factories. In many cases too—as with Venezuelan oil, Chilean copper, and the rubber of Ford's Amazonian plantations—the raw materials were exploited by foreign capital, hence profits were exported with the products and only wages and taxes remained for possible use as capital in internal development. Under that system there was no need to develop the Amazon basin except when markets for its products were found in the rest of the world or, as in the case of the Ford plantations, when foreign capital for one reason or another found it expedient to develop some small part of it. The Amazonian nations themselves, with few factories, had little internal need for Amazonian rubber, quinine, minerals, vegetable oils, fibers, or foodstuffs.

But those nations have now become thoroughly aware of the danger of leaving the fate and future of a wealthy empire the size of the United States entirely to the mercy of foreign countries. The basin's quinine boom collapsed when the rest of the world turned to Asiatic plantations for its supplies of that important drug; the rubber boom collapsed, leaving a stranded population of many thousands, when the same thing happened to rubber. During the 1930's, Brazil nuts formed the Amazon's principal item of export; everywhere throughout the region one found fearful apprehension that history would repeat itself, that the British or the Dutch would start raising Brazil nuts in plantations, and so wreck one more mainstay of the basin's very shaky economy. Governments, especially that of Brazil, were urging residents to start planting Brazil nuts in orderly rows, so they wouldn't have to run everywhere through the jungles to find them, and

were doing much agricultural research on the problem. That in itself amounted to a stirring toward development and settlement, for plantations require stable populations, which in turn require food.

AXIS NATIONALS IN THE AMAZON

In the years between the collapse of the rubber boom and the outbreak of the present war, the Amazonian nations not only saw one town after another virtually deserted, one river after another given back to the Indians, with skeleton populations often held in place elsewhere only by such artificial means as government subsidies of transportation, but they saw also a sometimes alarming interest in the basin shown by other nations. Not only did Japanese settlers come in by the thousands; the Japanese government even asked Brazil for a large colonization tract, in which Japan and not Brazil was to have governmental powers. Italians came in and made themselves at home in such cities as Obidos. German naturalists and missionaries traveled everywhere, and sent so steady a stream of reports back to their home country that Germany probably knew more about what went on in the basin than did some of the Amazonian nations themselves. German business houses had long been established in such cities as Ciudad Bolívar in Venezuela and Iquitos in Peru, whence they exercised a powerful commercial and economic control over vast hinterland areas. In Venezuela it was said by some that the upper Orinoco did not, for practical purposes, belong to Venezuela at all, but to the German firm of Blom and Company.

STIRRINGS OF ECONOMIC NATIONALISM

While the dangers indicated by those symptoms were becoming clear to the Amazonian nations, those countries were themselves stirred by that powerful movement toward economic national-

ism that has swept all of Latin America since the first World War. Everywhere in the vast area between the Rio Grande and Cape Horn, the conviction has grown that the nations of Latin America must modernize themselves, reshape their economies, stop giving sweeping concessions to foreign capital, develop their own resources, keep the profits thereon at home to be used as capital for further development, build their own factories, and stop sending their money abroad for purchasing other people's manufactured goods. In Venezuela, for instance, the death of President Gómez in 1935 shook the country into a rude awakening to the fact that under his rule Venezuela had become almost entirely dependent on its petroleum resources, exploited by foreign capital. Superficially Venezuela was prosperous, but when her oil gave out she would be bankrupt with no developed resources to take its place. The obvious implication was that Venezuela must strengthen her economy with the kind of all-around development that meant, among other things, the erection of factories to produce at home at least some of the goods that the Venezuelans had to have.

TONS OF BURNING COFFEE

Similarly, just as the collapse of the rubber boom had driven home to Brazil the uncomfortable lesson that it was extremely dangerous for the economy of the Amazon basin to depend on one product, so the past two decades have proved that the economy of the entire Brazilian nation was in a shaky condition as long as it depended largely on the export of any one such crop as coffee. The smoke from thousands of tons of burning surplus coffee did as much to convince the modern Brazilians of the need for all-around industrial development as did the fact that during wartime they found it very difficult to import the foreign manufactured goods that they needed.

INDUSTRIALIZATION IN BRAZIL

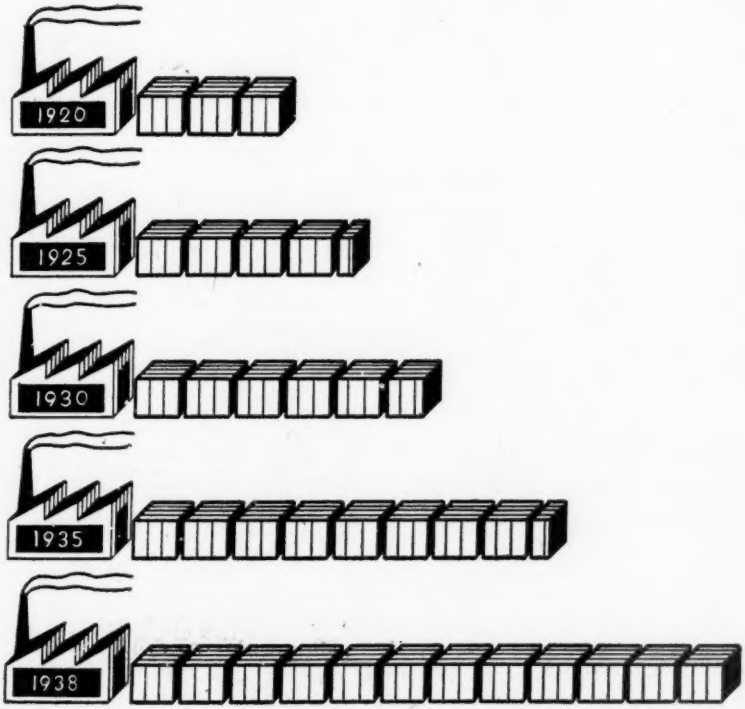
While the trend toward industrial development is seen in all the Latin American nations, it is naturally most apparent in such large and progressive countries as Mexico and Brazil. Between 1911 and 1938, the latter country's production of manufactured goods increased tenfold. "These figures," writes Dr. Rodrigues Silva, ". . . show that there already exists in Brazil an industrial impulse which from year to year has been growing more invigorated and which constitutes an immense determination not to remain merely a world supplier in periods of emergency."*

So much progress has Brazil made, not only in agriculture but also in the processing of foods, the development of electric power, and the manufacture of a wide range of articles, including shoes, textiles, ceramics, tires and other rubber goods, that the nation is now beginning to embark on heavy industry. It has begun to make and roll its own steel, and the Brazilian plan for industrial development is aimed at the manufacture, as rapidly as possible, of machinery, of rails and locomotives, and at the consequent widespread improvement of transportation facilities through which the entire program of industrial development may be accelerated.

Because, of all the Amazonian nations, Brazil is most powerful and industrially advanced, and because it owns the major part of the Amazon basin, Brazil, as indicated by President Vargas' statement in 1940, is taking the lead toward Amazonian development. For we must remember that to a Brazilian the Amazon basin is not some wild and dangerous area, fit largely to be a stage on which explorers can demonstrate their prowess; it is an integral part of the country, to be developed along with the other parts.

*Rodrigues Silva, "Brazil's Nationalist Economy." A paper in *The Economic Defense of the Western Hemisphere: A Study in Conflicts*, American Council on Public Affairs, 1941. P. 148.

THE GROWTH OF INDUSTRY IN BRAZIL



EACH CRATE REPRESENTS MANUFACTURED PRODUCTS WORTH A MILLION CONTOS A CONTO WAS ABOUT $60 IN 1938

In that integrated national development, the Amazon basin naturally plays an important role. An industrial nation must see to the retention and development of its own resources. Regardless of where the United States may buy its rubber after the war, Brazil will be building more tire factories and making more hot-water bottles than ever before, and can so use increasing quantities of its own rubber. The present industrial planning of

the Brazilian government already contemplates a plastics industry, a chemical industry, and the manufacture of such items as shoe polishes and fiber wares, based largely on the products that are found in quantities in the Amazon basin.

It is when the resources of that basin become important to the Amazonian nations themselves that steps will be taken to develop them to the full, to invite populations into the region, improve transportation facilities, and foster agriculture as a necessary basis for all further action. Whether such steps are taken by the nation individually, or acting together for the regional development of the whole vast area depends not on anything that can be predicted at present but on political feelings and international relations at that time.

SOCIAL PROBLEMS OF INDUSTRIALIZATION

When a nation emerges from a semi-feudal, colonial economy into one of industrialization and something approaching national self-sufficiency, it inevitably faces grave social problems. To put it most crudely, a semi-feudal nation can afford to have its common people living under abysmally low standards, since every pair of shoes bought by a peon represents the export of a corresponding amount of money. But when the nation begins to make its own shoes, it not only must create internal markets by raising standards of living, it must also create a trained labor force, and large and relatively prosperous working and middle classes. In that need is seen one explanation for the wave of social legislation, the drive toward universal education, the renewed interest in public health, the active participation in low-cost housing programs, the interest in government-sponsored cooperative programs, that have lately swept all the Latin American nations with varying degrees of intensity.

Governments know full well the value of a frontier at such

times. One way to create a relatively prosperous and powerful middle class is to create a class of independent, land-owning farmers, similar to those found in the United States. Hence one explanation for that need for dividing up the large estates that almost every nation on earth has had to face at one time or another. But the need becomes less urgent when there exists a frontier on which people can be settled on small land-holdings. Hence, also, an explanation for the dream of Amazonian development that is taking firm root in some of the South American countries today.

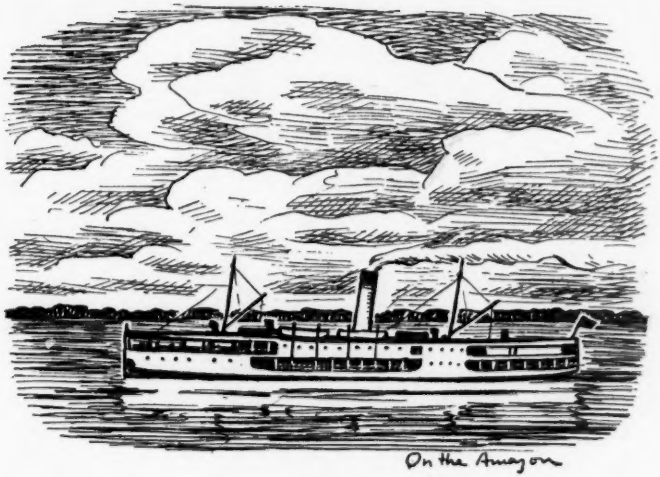
It is a dream, not of charity or agricultural settlement, but of something like the same kind of all-around development that took place in our own West when the United States was emerging as a powerful industrial nation. In those days, just as the Amazon basin is beginning to lose many of its terrors, large parts of our West changed from "The Great American Desert" into veritable garden spots that lured thousands of pioneers into the discovery that their actual nature was somewhere between those two extremes. The dream for Amazonian development is not one under which South America would, out of mere kindness, open her doors to the world's dispossessed. It is one of such well-rounded expansion as Sir Walter Raleigh had for North America, and Cecil Rhodes for Africa.

PRELIMINARY STEPS

And it is not too large to begin to materialize immediately. Peru's new Tingo María road has already tapped the fertile Huallaga Valley for potential colonization; the dozen or so airports that were hewn out of the Amazonian jungles as part of the wartime rubber program, the new airlines, new roads, new ships that form part of that program, the efforts that were made to improve public health, the attention that the whole program

focussed on the basin, can all be regarded as necessary preliminary steps toward all-around development, regardless of the much debated success or failure of our rubber program. But even today, foodstuffs by the thousands of tons are still being imported into the basin. Let the Amazonian nations see some way of preventing another general slump after the end of the present rubber boom, let them find a way of keeping a large proportion of their present populations there, and they will have a ready market for a great deal of agricultural development.

Whether or not refugees from Europe and elsewhere will fit into the dream of Amazonian development depends entirely on the speed with which it materializes. Regardless of present attitudes, one can almost predict with certainty that those refugees will be admitted and welcomed, when and if the Amazonian nations find that they need their labor, resources, and technical skills.



12. International Considerations

José Jobim's book on modern Brazil ends with this statement:

> "If the implements of production are made available to Brazil, she will be able to place her limitless resources in the first line of the great battle of production. This will be an industrial alignment, supplementing the political one, of two of the greatest countries of the Western Hemisphere."*

That "if" simply means that much can and might be done by the rest of the world to retard the development of the Latin American nations, and so of the Amazon basin. A post-war United States may throw aside the concept of hemisphere solidarity, and deny machine tools to Latin America under governmental embargo policies and at the instigation of those industries that fear competition from south of the Rio Grande. Efforts of various kinds to prevent the development of the Amazon basin

*Brazil in the Making, cited. P. 305.

may be made by those who are directly interested in the Asiatic plantations of rubber and quinine, by our plastics industry and manufacturers of synthetic rubber, while our makers of machine tools, faced with the possibility of a great post-war slump, can be expected to be wholeheartedly on the side of a hemisphere development that will give them an outlet for their surplus products.

MACHINE TOOLS AND THE GOOD NEIGHBOR POLICY

At present our Good Neighbor Policy, going hand in hand with the kind of economic thinking that embraces the entire hemisphere, and not merely our own country, is shaped to some extent—though not entirely—toward permitting and helping the Latin American nations to develop themselves. Recently, for instance, we sent an industrial mission to Brazil under Morris Llewellyn Cooke to advise that nation on problems of water-power development, steel and aluminum manufacture, and other aspects of large-scale industrialization. In a recent article in the *Saturday Evening Post*, Mr. Nelson Rockefeller pointed out that our wartime rubber program in the Amazon basin need not collapse with the establishment of peace, because the Amazonian nations themselves might take it over and put it on a permanent basis for their own benefits.

There are thousands of Latin Americans today, who maintain that the test of our entire Good Neighbor Policy after the war will be not our recognition that the other American nations have great cultural traditions, but our willingness to sell them the machine tools with which they may build up their own countries.

A POST-WAR GOOD NEIGHBOR POLICY

While nobody can predict the course of post-war national policies, there are many reasons for believing that the United States

will retain the major features of the Good Neighbor Policy, and so of hemisphere economic thinking. A few of these reasons, which have a real bearing on the entire problem of the Amazon basin, are as follows:

(1) There are thousands of North American businessmen who are today beginning to take the long-range view that what helps one helps all. In other words, instead of wanting to hinder Latin American development, they want to see it helped, so that other American nations, through industrialization, can raise their standards of living and thus create greater markets for all. Especially prominent among these are the businessmen who may invest money in Latin American development after the war and will so be clamoring to have no obstacles put in the way of such development.

(2) Many of those North American businessman who fear a post-war slump are already thinking of a possible large-scale pioneer movement in the Western hemisphere to ease the burden of that slump. They hope to substitute a new and peaceful war against nature for our present devastating war against human enemies.

(3) Military men, concerned with the problem of that military strength on the basis that is implied in the modern term "hemisphere defense," realize perfectly that real military strength depends on our having the Latin American nations as allies, and not as economic colonies. As strong, industrialized allies, they can make their own war materials; as weak, semi-feudal nations, with colonial economies, they would be a constant drain on our own war resources. Moreover, not only would the development of the Amazon basin add to the industrial and military strength of the Amazonian nations, but military men are fully aware of that region's weakness and vulnerability to attack as long as it remains a relatively unpopulated wilderness.

(4) Military men, too, see the advantage of having sources of rubber and other essential industrial supplies closer to home than Asia. No matter how the world may be readjusted after the war, the fact will remain that it is easier to protect lines of supply from the Amazon basin, than across the wide Pacific.

NORTH-SOUTH EXPANSION TO COME?

For these and many similar reasons it seems proper to hope that the Good Neighbor Policy will remain a reality after the war. There seems no present likelihood that our own policy will be altered after the war to stand in the way of Amazonian development by denying to Latin America those tools of production essential to general national industrialization. Indeed, if post-war conditions demand the continuation of our present "hemisphere economic thinking," under which all the Americas stand and grow together, it is much more likely that the end of the war will see a new pioneer rush into all the remaining American frontiers, from Alaska to Patagonia.

Until now the world has expanded in an east-west direction. Now East and West have met, and there is every indication that before long it will start a vigorous expansion to the north and the south.

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BRAZIL AND THE UNITED STATES

Eugene Golob

Brazil and the United States have always been the best of friends. The American consul received by the Prince Regent of Portugal at Rio de Janeiro in 1808 was the first of our consuls to be recognized in South America, and the first treaty between the two nations was signed in 1828. The United States was the first foreign power to recognize the Brazilian Empire (1824) and the first great power to recognize the Brazilian Republic (1889). And there could have been no greater testimony of reciprocity in friendship than Brazil's breaking relations with Germany four days after America's declaration of war in 1917, and in fully joining the Allies in October of the same year. Again, six weeks after Pearl Harbor Brazil broke relations with the Axis powers, and declared war on Germany and Italy on August 22, 1942.

It is only in recent years, however, that Brazilian-American friendship and cooperation have grown into a major force for peace and progress in the Western Hemisphere. As the distance between them has shortened, the two nations have found more and more matters of common concern. Distrust of the United States, always less important in Brazil than in other Latin American states, was gradually dissipated in the period between the two World Wars. The Gondra Conciliation Treaty of 1923, Pan American Conferences in 1923 and 1928, the retreat from imperialism during the Hoover Administration, all helped prepare the way for the enunciation of the Good Neighbor policy by Franklin D. Roosevelt in 1933.

As far back as 1928, Mr. Roosevelt had written that events which might disturb the tranquillity of the Americas were subjects for the attention of all Twenty-one Republics, not of one alone. This statement marked an approach to the Latin American (and particularly Argentine) doctrine of nonintervention, a doctrine the United States was soon to accept, wiping out the last vestiges of paternalism in the Monroe Doctrine. But at Montevideo, in 1933, the United States accepted this and other Latin American concepts of sovereignty only in so far as they were recognized by international law in general. One more step remained, and this was taken at the Special Inter-American Conference for the Maintenance of Peace, held at Buenos Aires at the end of 1933 on Mr. Roosevelt's suggestion. Here a conflict had appeared between United States and Argentine plans for hemisphere solidarity against war. The latter's proposals were directed toward relation with Europe and the League; the former's toward American conferences in all instances of danger to peace in the Western Hemisphere. A brilliant proposal of the Brazilian delegation solved the problem: first, it provided that the American Republics should consult when war threatened from within or without the Hemisphere; second, that no single Republic should intervene in the affairs of another. The Argentine principle of nonintervention, designed to limit the influence of the United States, had been accepted; but so had the American principle of consultation for joint action. And the latter was to prove the more fruitful.

Another important aspect of the Good Neighbor policy was Secretary Hull's reciprocal trade program, designed to bring about a gradual reduction of tariffs and to reverse the trend toward barter agreements, clearing arrangements, and blocked currencies that was sweeping from the Old World into a potential battleground in the New. The first treaty concluded in the Hull

program (aside from a special arrangement with Cuba) was that with Brazil, signed February 2, 1935. About eighty-five per cent of America's imports from Brazil had been accounted for by the single crop, coffee, but relatively constant quantities of imports entered at declining prices, despite the efforts of the Brazilian Government to stabilize coffee prices. The agreement which came into effect January 1, 1936, did not entirely solve this problem, but trade between the two nations did increase: Brazil's exports to the United States rose 2.3% during the first year of the new rates, her exports 12.2%. Low coffee prices and competition of German barter agreements help to account for the relatively small increase in American-Brazilian trade. Later Brazil, encouraged and supported by the United States, terminated her arrangements with Germany. Brazil continued to have a commodity import balance in her trade with the United States until 1941, when, owing to increased American war mobilization, an export balance came into being.

Inter-American solidarity, and Brazilian-American cooperation in particular, became increasingly evident and important in the years preceding Pearl Harbor. The American Republics met at Lima in December 1938, a few months after the tragic Munich Conference, and while the Argentine Foreign Minister turned his eyes from the gathering storm, Brazil not only joined fully with the others but was willing to go even farther than the United States toward coordinated action to preserve peace in the Americas. The Declaration of Lima, which resulted from this conference, enabled the American nations to present a common front when the storm broke in 1939, and the Declaration of American Principles, sponsored by the Brazilian delegation at Lima, presented a broad code of international conduct that many observers believed would have greater long-range influence than the Declaration of Lima itself.

On September 23, 1939 the American Foreign Ministers met at Panama to strengthen hemisphere solidarity, and, in keeping with United States policy, to frame their regulations of neutrality in a sense favorable to the Western democracies. They agreed to prevent their inhabitants from committing acts which might endanger the neutrality of the Americas; they recognized the legality of flag transfers of merchant vessels from one Republic to another (which enabled United States shipping, barred from the war zones under neutrality legislation, to sail to England under the Panamanian and other flags); they revised existing rules to permit armed merchantmen to unload and take cargo at American harbors and to bar belligerent submarines if so desired (already done by Brazil, September 2); and they proclaimed the existence of a wide neutral belt in the seas about the Americas, within which President Roosevelt was enabled to act for all the Republics in ordering a naval neutrality patrol.

The fall of France, and the attendant possibility of transfer of her Caribbean possessions to another European power, provided the background for the Havana Conference of July 1940, at which the American Republics decided to act together to prevent any transfer that might lead to aggression. In accordance with this provision, the United States and Brazil cooperated in occupying Dutch Guiana (Surinam) in November 1941.

The United States' entrance into the Second World War on December 7, 1941, gave the occasion for a genuine test of American friendships. Victory certainly seemed to be settling on the banners of the Axis; yet Brazil, with the other Republics, instantly pledged solidarity and condemned the aggressors. Shortly after, on January 15, 1942, the third meeting of Foreign Ministers began at Rio de Janeiro. They proclaimed that aggression against one Republic was aggression against all, and recommended breaking relations with the Axis powers. This Brazil did as the

conference closed on January 28. An Inter-American Defense Board was created, to meet in Washington, and provision was made for close Latin American economic cooperation with the United States. The Good Neighbor policy had assured the once distrusted "Colossus of the North" the full support of its fellow Republics on two continents, with the regrettably lingering exception of the Argentine.

It is against this background of Pan American relations as a whole that the story of United States-Brazilian cooperation in the Second World War must be told. The strategic importance of Brazil to warfare in the Atlantic is obvious: her coasts, in hostile hands, would make defense of Caribbean and South Atlantic shipping lanes extremely difficult; the relatively short air flight between Dakar, in French West Africa, and Natal, on the eastern bulge of Brazil, was a source of constant worry to the democracies. From a positive standpoint, the resources of Brazil assumed greater importance than ever before as Japan cut off supplies of rubber, tin and other strategic materials in East Asia.

Measures of economic cooperation between the United States and Brazil had preceded the outbreak of war. In March 1939 the Export-Import Bank lent the Bank of Brazil $19,200,000 to help Brazil terminate control over foreign exchange operations "insofar as such control affects commercial relations between Brazil and the United States." This action resulted in freeing American exporters' blocked milreis accounts. In September 1940 Brazil received a loan of $20,000,000 to build an iron and steel mill near Rio de Janeiro, and on October 1, 1941, a lend-lease agreement for about $100,000,000 was concluded. Work was speeded on the Ford rubber plantations, and early in 1942 arrangements were made for the construction of a Wright engine plant near Rio de Janeiro. On March 3, 1942, the Brazilian Finance Minister, Dr. Arthur de Souza Costa, completed extremely impor-

tant economic negotiations in Washington. Provision was made for a $100,000,000 credit to develop Brazil's resources, and for further mutual lend-lease aid. In addition, the Rubber Reserve Company, a United States Government agency which was to furnish $5,000,000 to develop raw rubber supplies in the Amazon basin, contracted for the entire output for five years; the Itabira iron mines were to be exploited fully, and the Victoria-Minas Railroad, their outlet to the sea, was to be rehabilitated with the aid of a loan of up to $14,000,000 from the Export-Import Bank. The Itabira project was of special importance, for its high grade ores could replace Swedish ores in special steels.

With respect to purely military arrangements, an agreement was reached as early as January 1941 for sending a United States military and aviation mission to Brazil. Natal has since been developed as a great air base, a mainline stop *en route* to Africa. The Brazilian armed forces have received American equipment and training, high officers of both countries have exchanged visits, and Brazilian forces have fulfilled their role in the Battle of the Atlantic.

Brazil's cooperation with the United States' war effort was not limited to the measures mentioned. Two days after Pearl Harbor financial transactions of non-American belligerents were placed under government control. In February 1942 the German-controlled Condor air lines were reorganized under purely Brazilian ownership, and new air services were established in cooperation with an American firm. The United States was exempted from restrictions applying to belligerents. After Brazilian shipping had been attacked, thirty to forty per cent of the assets of Axis firms were seized to guarantee compensation. Foreign language schools were carefully supervised or closed outright; Brazil's 500,000 Germans and 180,000 Japanese were closely watched. And on August 22, 1942, when the Germans were still at El Alamein,

when the Russians had retreated beyond Rostov, when the first United States offensive in the Pacific had barely begun on Guadalcanal, Brazil declared war on Germany and Italy.

Thus the record of well over a century of friendship and increasing cooperation between the two nations gives promise of even closer and mutually more profitable relations in the future. The United States has long been at a high level of industrialization, Brazil has the greater part of the road before it. And here it is well to note that Brazilian policy will not invite unorganized, hit-or-miss investment. Brazil under Vargas has adopted a nationalist economic policy, calling for government guidance and integration of economic development. On June 11, 1940, a great stir was occasioned in both Americas by President Vargas' remarks on the necessity for a virile nation to take a virile course, rather than indulge in dreams of nineteenth century liberalism. His statement was widely interpreted as an endorsement of fascism, but the American State Department was unperturbed, and President Vargas and other Brazilian spokesmen denied such implications. It was said, in Rio de Janeiro, that Vargas had referred to internal policy, and to Brazil's need for greater economic and military strength. If this explanation is taken at face value, and subsequent events certainly support this interpretation, it means that in domestic policy Brazil will strive not for the autarky of fascism, but rather for economic expansion based on a varied, stable and balanced economy.

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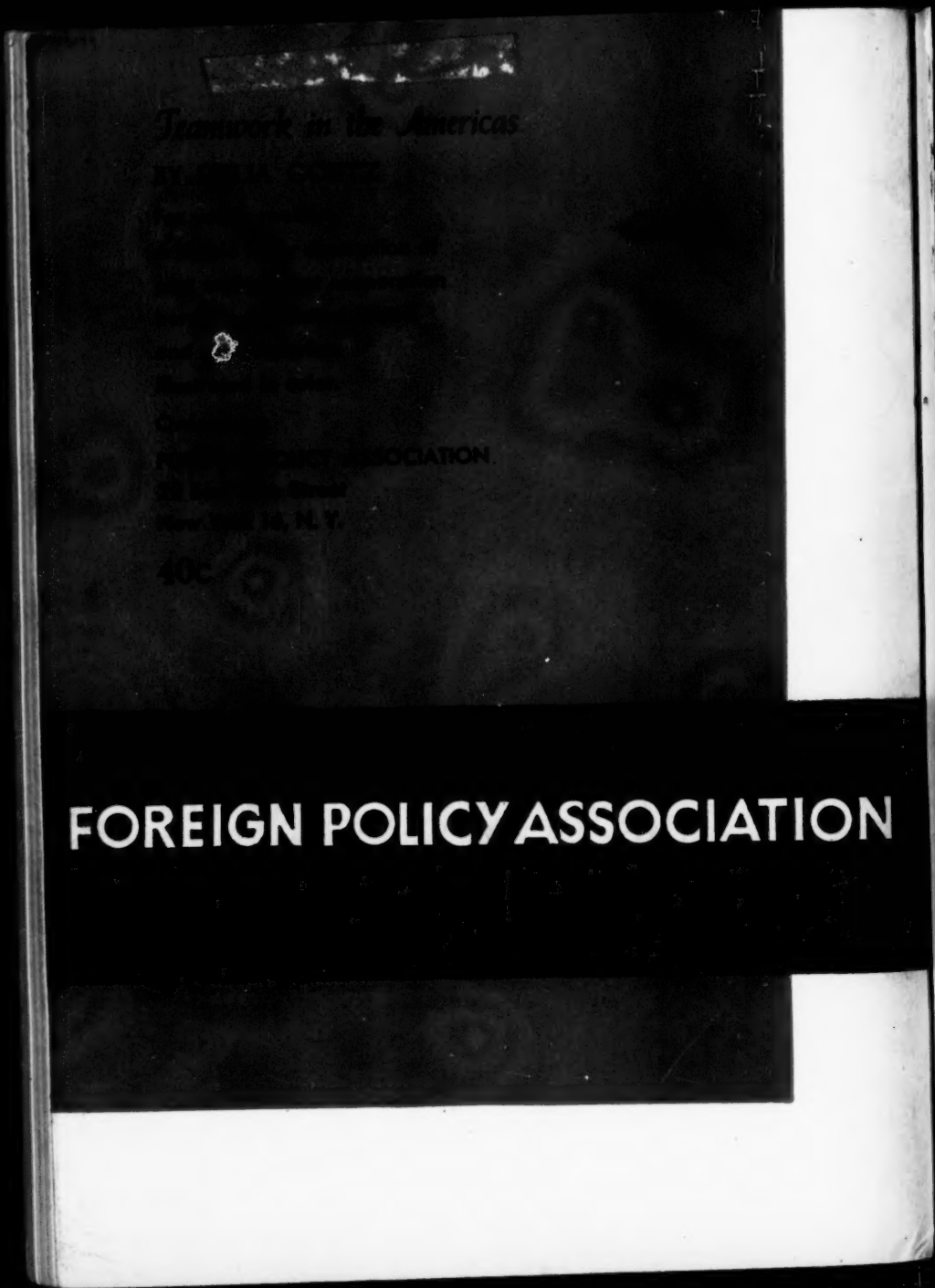
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